

## **Appendix F**

# **NATIONAL SCENIC AND HISTORIC TRAILS ASSESSMENT**

# NATIONAL SCENIC AND HISTORIC TRAILS ASSESSMENT

## INTRODUCTION

National Scenic Trails (NSTs) and National Historic Trails (NHTs) are part of the National Trails System, which is a network of scenic, historical, and recreational trails created by the National Trails System Act of 1968 (16 United States Code [USC] 1241–1251). NSTs and NHTs are authorized and designated only by Act of Congress. NSTs are continuous and uninterrupted extended trails more than 100 miles long, so located as to provide for maximum enjoyment of the nationally significant resources, qualities, values, and associated settings as the primary use or uses of the area through which such trails may pass. The use of motorized vehicles by the general public along any NST is prohibited (16 USC 1246). NSTs may provide non-motorized routes with outstanding recreational opportunities. NHTs commemorate historic routes of exploration, migration, trade, communication, and military action (National Park Service [NPS] 2013), and must meet three criteria: 1) follow as closely as possible the actual route of historic use, 2) be of national significance, and 3) have significant potential for public recreation and/interpretation opportunities (16 USC 1242).

NSTs and NHTs are formally administered by various federal agencies; however, land ownership may be public or private. To adhere to Bureau of Land Management (BLM) guidance for National Trails, this appendix focuses on the inventory and impact assessment of 1) congressionally designated National Trails, 2) trails undergoing National Trail Feasibility Study (trails under study), and 3) trails that are deemed suitable for designation, per BLM manuals 6250, 6280, and 8353. It should be noted that all National Trails were inventoried and reviewed based on National Environmental Policy Act (NEPA) requirements (i.e., equal level of analysis regardless of jurisdiction); however, the trails were evaluated using BLM methodology as outlined in Manual 6280. National trails were also evaluated in terms of individual resources, including biological, cultural, recreational, visual, and land use (see chapters 3 and 4 of the environmental impact statement [EIS]).

## REGULATORY FRAMEWORK

Federal agencies must consider the effects of their actions on NSTs and NHTs under the NEPA and the National Trails System Act of 1968 (16 USC 1246) which states that other uses along an NST or NHT that would not substantially interfere with the nature and purpose of the trail may be permitted by the Secretary charged with the administration of the trail. Reasonable efforts shall be made to provide sufficient access opportunities to such trails and, to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established (16 USC 1246). More specifically, the Secretary of the Interior, or the Secretary of Agriculture as the case may be, may grant easements and rights-of-way upon, over, under, across, or along any component of the National Trails System in accordance with the laws applicable to the National Park System and the National Forest System, respectively, provided that any conditions contained in such easements and rights-of-way shall be related to the policy and purposes of the National Trails System Act (16 USC 1248).

A designation as either an NST or NHT requires a two-step process: 1) Congressional authorization of a feasibility study, and 2) Congressional designation. While a trail is undergoing a National Trail Feasibility Study, or when a trail has been recommended as suitable for designation and Congress has not yet acted to designate the trail, the BLM shall manage the values, characteristics, and settings of the trail in accordance with the Federal Land Policy Management Act of 1976, as amended (FLPMA). Following congressional designation, the development of a trail comprehensive management plan (CMP) is required, which is used by various agencies in the development of land use planning documents (e.g., BLM Field

Office resource management plans [RMPs] and U.S. Forest Service [FS] land and resource management plans).

BLM implementation of the requirements established by the National Trails System Act can be found in the agency's National Trails System manual series—BLM Manuals 6250, 6280, and 8353 (BLM 2012a, 2012b, 2012c). These manuals provide administrative and management guidance.

- National Trails System Act of 1968
- *BLM Manual 6250 – National Scenic and Historic Trails Administration (Public)* addresses specific functions delegated to the BLM from the Secretary of the Interior pursuant to the National Trails System Act. Specifically, this manual describes how to conduct National Scenic or Historic Trail Feasibility Studies, how to administer an NST or NHT upon designation by Congress, and the responsibilities of National Scenic or Historic Trail administrators. This manual also identifies data and records management requirements.
- *BLM Manual 6280 – Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (Public)* provides policies for the management of National Scenic and Historic Trails. Specifically, this manual identifies requirements for the management of trails undergoing National Trail Feasibility Study; trails that are recommended as suitable for National Trail designation through the National Trail Feasibility Study; inventory, planning, management, and monitoring of designated National Scenic and Historic Trails; and data and records management requirements for National Scenic and Historic Trails.
- *BLM Manual 8353 – Trail Management Areas – Secretarially Designated National Recreation, Water, and Connecting and Side Trails (Public)* addresses secretarially designated National Recreation Trails (including the National Water Trails) and Connecting and Side Trails, including requirements for cooperative relationships; trail marking; identifying, evaluating, and recommending trails; nominating trails through the submission of application packages; and data and records management.

For the purposes of NEPA and the Project-level analysis addressed in this EIS, BLM Manual 6280 served as the primary regulatory guidance (BLM 2012b). This manual describes the steps that are required to identify and manage NST and NHT resources within the broader regulatory framework governing BLM-administered lands. More specifically, BLM Manual 6280 provides policy direction regarding the BLM's management approach and the NEPA analysis requirements for congressionally designated trails and trails undergoing feasibility studies, and trails deemed suitable for designation.

As part of the NEPA analysis, for any implementation-level action proposed or that may potentially affect NSTs, NHTs, or trails under feasibility study, the BLM shall:

- (i) For each alternative, describe and analyze the potential impacts to the nature and purposes of the National Trail, and the National Trail resources, qualities, values, and associated settings and the primary use or uses of the trail.
- (ii) Describe the impacts to the national significance of National Trails, based on NHPA National Historic Landmark criteria and other National Trails System Act criteria, as well as impacts to the significance of properties that are eligible or listed on the National Register of Historic Places (NRHP), as applicable.
- (iii) Ensure adequate public involvement in the BLM's management activities through the NEPA, land use planning, and/or other applicable processes.

- (iv) Coordinate with the National Trail administering agency during the environmental review and land use planning processes regarding the establishment of the National Trail Management Corridor. It should be noted that no National Trail Management Corridors were established for the proposed Project in context with this appendix. However, a study corridor (analysis area) was developed to inventory and assess impacts to National Trails in terms of resource, values, qualities, and associated settings. The analysis area was established in consultation with the Trails “Stakeholder Group,” which consisted of agency trail administrators, agency resource specialists, and public trail groups.
- (v) To the greatest extent possible, consider opportunities for mitigation to a level commensurate with the adverse impact to the nature and purposes; resources, qualities, values, and associated settings; and the primary use or uses of the National Trail.
- (vi) Include the following in the Decision Record or Record of Decision:
  - (a) Whether the proposed Project will substantially interfere or will be incompatible with the nature and purposes of the National Trail, including the resources, qualities, values, or associated settings, or the primary use or uses.
  - (b) A description of the action taken to authorize or deny an activity or the application of any best management practices or mitigation measures (BLM 2012b).

For trails under feasibility study, the NEPA analysis for the proposed Project will consider existing data, including data from the completed National Trail Feasibility Study (if available), data provided to the BLM by the agency conducting the National Trail Feasibility Study, or additional data collected as necessary for alternative formulation and analysis of the proposed Project (i.e., proposed Southline Transmission Line Project, herein called the Project). In evaluating whether to approve the proposed Project, the NEPA analysis will:

- (i) Describe the values, characteristics, and settings of trails under study and trails recommended as suitable in the affected environment section of the NEPA document.
- (ii) Analyze and describe any impacts of the proposed Project on the values, characteristics, and settings of trails under study or trails recommended as suitable.
- (iii) Consider an alternative that would avoid adverse impacts to the values, characteristics, and settings of the trail under study or recommended as suitable and/or incorporate and consider applying design features to avoid adverse impacts.
- (iv) When the proposed Project is anticipated to have a significant adverse impact, there must be coordination between the BLM State Office and the assigned National Trail Feasibility Study agency office. If the anticipated significant adverse impact cannot be avoided, the BLM State Office must contact the BLM Washington Office so that coordination with the study agency headquarters office can be initiated (BLM 2012b).

Other federal legislation or regulation applicable to NSTs and NHTs in the analysis area includes:

- *Federal Land Policy and Management Act of 1976, as amended* (43 USC 1701; Public Law [PL] 94-579). The FLPMA consolidates and articulates BLM management responsibilities and governs most uses of federal lands, including authorization to grant or renew rights-of-way. In accordance with the FLPMA, the BLM must make land use decisions based on principles of multiple use and sustained yield. As such, a grant of right-of-way (ROW) must be limited to its necessary use and must contain terms and conditions that reflect the agencies’ management responsibilities under the FLPMA, including minimizing impacts on fish and wildlife habitat.

- *National Landscape Conservation System* (16 USC 7201–7203) was established in 2000 by a Department of Interior Secretarial Order, “in order to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.” The National Landscape Conservation System was made permanent and codified in the Omnibus Public Land Management Act of 2009 (PL 111-11, Title II). The system includes the following areas administered by the BLM: National Monuments, National Conservation Areas, Wilderness, Wilderness Study Areas (WSAs), Wild and Scenic Rivers, National Scenic and Historic Trails, Cooperative Management and Protection Areas, Outstanding Natural Areas, and Forest Reserves.
- *The National Historic Preservation Act of 1966, as amended* (16 USC 470; 36 Code of Federal Regulations 800) directs federal agencies to take into account the effects of their actions on historic properties and/or unevaluated cultural resources and provide the Advisory Council on Historic Preservation a reasonable opportunity to comment.
- *BLM Manual 8400 – Visual Resource Management* outlines the system used by the BLM to manage visual resources on BLM-administered lands, and includes an inventory of existing scenic values as well as management objectives that define the allowable levels of disturbance or visual contrast.

## ISSUES IDENTIFIED FOR ANALYSIS

As noted in the introduction, in order to adhere to BLM guidance for National Trails, this appendix focuses on the inventory and impact assessment of 1) congressionally designated National Trails, 2) trails undergoing National Trail Feasibility Study (trails under study) and, 3) trails that are deemed suitable for designation per BLM Manuals 6250, 6280, and 8353.

Based on a screening of these three elements, four trails are considered in this appendix. Beginning in the eastern portion of the analysis area and proceeding west, these include the Continental Divide National Scenic Trail, the Arizona National Scenic Trail, the Juan Bautista de Anza National Historic Trail, and the Butterfield Overland Mail and Stage Route (Butterfield Trail) (figures F-1 and F-2). The Butterfield Trail occurs in both the eastern and western portions of the analysis area.

## National Scenic Trails

### *Continental Divide National Scenic Trail*

The Continental Divide National Scenic Trail (CDNST) extends between the Montana–Canada and New Mexico–Mexico borders, roughly following the mountains that form a watershed divide between the Mississippi River drainage to the east, and rivers flowing to the Pacific to the west. Established in 1978, it was designated to provide a scenic, high-quality, and primitive experience along a continuous and appealing route through diverse terrain for travel by hikers and equestrians (FS 2009). At the time of its establishment, it was intended to mimic the scenic trail concept of the Appalachian Trail and Pacific Crest Trail, two previously created National Scenic Trails spanning major north-south cordilleras of the mainland United States. The CDNST crosses FS, BLM, State, and private lands through New Mexico. The CDNST crosses through the town of Lordsburg, New Mexico and the Interstate 10 (I-10) corridor within the Project analysis area between the Pyramid Mountains and the Big Burro Mountains, all within developed/rural areas. The Mimbres RMP includes management prescriptions for these areas of the CDNST that occur on BLM-managed lands.

## ***Arizona National Scenic Trail***

The Arizona National Scenic Trail (Arizona NST) extends over 800 miles from the Utah–Arizona and Arizona–Mexico borders, across various ecosystems, terrain, and remote rural landscapes of the state. Conceptualized as the Arizona NST by Dale Shewalter in the 1980s, the route of this trail was identified and constructed in the 1990s and early 2000s under the lead of Arizona State Parks, with funding from the U.S. Forest Service, BLM, and NPS. The trail was designated as an NST in 2009 and the administration of the trail was assigned to the U.S. Forest Service; the final links completing it from end to end were constructed in late 2012. While trail feasibility studies have been produced for many trails since 1968, including the CDNST, the Arizona NST was exempted from this requirement due to 1) its location on primarily public land, 2) the fact that it was already established for much of its length, 3) its strong local, regional, and state advocates, and 4) its outstanding recreational opportunities.

A trailwide CMP must be developed by the lead agency for a congressionally designated National Trail. At this time, a CMP has yet to be developed for the Arizona NST. The United States Forest Service is the lead agency in the development of the CMP. BLM manages approximately 45 miles of the Arizona NST, all located outside of the analysis area. The trail crosses FS, BLM, NPS, State, and private lands from the Utah border to Mexico. It crosses the Project analysis area east of Tucson, at the I-10 corridor near Cienega Creek Natural Preserve between the Santa Rita and Rincon mountain ranges. The Arizona NST is located on State and privately owned lands in this location and does not cross BLM land within the analysis area.

## **National Historic Trails**

### ***Juan Bautista de Anza National Historic Trail***

The Juan Bautista de Anza National Historic Trail (Anza NHT) commemorates the route taken by Anza in 1775–1776, when he led a group of colonists from Mexico to found a presidio and mission for New Spain at San Francisco Bay. Established in 1990, this congressionally designated historic trail administered by the NPS is approximately 1,200 miles long, extending from Nogales, Arizona to San Francisco, California (NPS 1996). For lands outside NPS units, local land managers and property owners take the lead in maintaining the Anza NHT in accordance with the CMP and coordinate interpretation with the NPS. The Anza NHT is associated with the following three components:

- Historic Corridor—the historic path traveled by the expedition
- Recreational Trail—a modern recreational trail developed by local land managers that generally parallels the historic trail corridor. Intended to be a continuous recreational trail from Nogales, Arizona to the San Francisco Bay Area
- Auto Tour Route—published and signed driving route that follows the historic corridor, connecting related historic sites

Only a small portion of the historic trail crosses federal land between Nogales and San Francisco. The trail primarily crosses private land in Arizona, with portions of the trail crossing BLM and State lands as the trail continues west to California. For the Project analysis area, the trail is generally located within the metropolitan area of Tucson along the Santa Cruz River, generally paralleling I-10 to the proposed Project's terminus near the town of Marana, Arizona.

## Trails Recommended as Suitable for National Trail Designation

### *Butterfield Overland Mail and Stage Route*

Obtaining congressional approval in 2009, the Butterfield Trail is currently under feasibility study by the Secretary of the Interior (Sec. 7209 of PL 111-11). As such, the nature and purpose of the trail is not defined but would be consistent with the National Trails System Act, which provides “for outdoor recreation needs of an expanding population” and promotes “the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air outdoor areas and historic resources of the nation.” The proposed Butterfield Trail commemorates the routes pioneered by John Butterfield and the Butterfield Overland Stage Company as they traveled over the “ox-box route” between St. Louis, Missouri and Memphis, Tennessee, ending in San Francisco, California. Within the Project analysis area, the Butterfield Trail extends from Las Cruces, New Mexico through Marana, Arizona, crossing BLM, State, and private lands through Arizona and New Mexico. Although the alignment provided by the NPS is still under study, the trail crosses BLM land near Deming and Lordsburg, New Mexico. The Mimbres RMP includes management prescriptions for these areas of the Butterfield Trail that occur on BLM-managed lands.

## ANALYSIS METHODOLOGY

### Introduction

For the Southline Project, a detailed methodology to conduct Project analysis for National Scenic and Historic Trails (August 2013) was developed by the contractor in coordination with BLM staff (Field Office and State Office [New Mexico and Arizona] National Trails System specialists). Inventory data were used to characterize the affected environment for all national scenic and historic trails, and trails under study or trails recommended as suitable, for all alternatives regardless of jurisdiction. Based on the guidance provided in BLM Manuals 6250 and 6280 and consultation with applicable National Trails System specialists, the following was considered: trail components, viewshed analyses, scenic resources, historic and cultural resources, recreation, natural resources, and other landscape elements as applicable. The following agency planning-level data were requested, and Project-level data were used where data gaps were identified out to 1 mile on either side of the proposed Project centerline. (This 2-mile-wide analysis area was developed in conjunction with BLM specialists and is consistent with other resource analysis areas (e.g., recreation, cultural, special designations, visual). Unique landscape features associated with the trail or trail interpretive recreation areas beyond 1 mile on either side of the proposed Project centerline were identified where appropriate.

- Planning-level Data
  - Visual Resource Inventory (VRI)
    - Scenic Quality Rating Units (SQRU)
    - Sensitivity Level Rating Unit (SLRU)
    - Visual Distance Zone
  - National Historic Trail federal protection components
    - High-potential route segments
    - High-potential historic sites

- National Scenic Trail components
  - Route segments
  - National Trail ROWs/corridor
- Recreation Spectrum Opportunity (ROS) data, where available
- National Scenic and Historic Trail routes and ROWs (16 USC 1246 (7)(a))
- Project-level data (i.e., derived from this EIS for applicable resources, qualities, values and associated settings)
  - Identification of recreation areas (i.e., Special Recreation Management Areas, trailheads, connector roads, interpretive kiosks, etc.), trail-associated viewing locations, and key observation points
  - Identification of historic points of interest related to the trail and NRHP-listed properties
  - Biological data that may include vegetation communities (i.e., wetlands, floodplains, and woodlands), rare species occurrences, critical habitats, and biological features such as habitat conservation areas, migration corridors, and biological core areas

Figures in this appendix include the overview maps above (see figures F-1 and F-2), an index map that illustrates the locations for the Southline Transmission Line Project Project-level National Trails System assessment (figure F-3) and detailed inventory map panels for visual and recreation resources (figures F-4 through F-24), and cultural, biological, and other natural resources (figures F-25 through F-45) in the analysis area. Composite impact assessment results are illustrated on map panels (figures F-46 through F-66).

## Inventory (Affected Environment)

### *Trail Components*

For each National Trail and alternative route being evaluated in a NEPA analysis, the affected environment identifies and describes 1) the nature and purpose of the National Trail, if available; 2) the trail's resources, qualities, values, and associated setting(s), 3) primary use(s), 4) the National Trail Right-of-Way and Management Corridor, if available 5) for NHT, Federal Protection Components, the analysis area was limited to the high-potential route segments, high-potential historic sites, and auto tour routes, and 6) National Trail-related NRHP properties (both eligible to and listed on the NRHP).

- **Nature and Purposes of the National Trail** – The nature and purposes are defined as the character, characteristics, and congressional intent for a designated National Trail, including the resources, qualities, values, and associated settings of the areas through which such trails may pass; the primary use or uses of a National Trail; and activities promoting the preservation of, public access to, travel within, and enjoyment and appreciation of such trails. Only those National Trails that have been through the comprehensive management planning process have a formal nature and purpose statement; however, a similar statement regarding the management of a National Trail can be found in the National Trails System Act, along with related Congressional Reports (if available), and will be used in lieu of the nature and purpose if such language exists.
- **National Trail Resources, Qualities, Values, and Associated Settings** – The resources, qualities, and values are defined as the significant scenic, historic, cultural, recreational, natural (including biological, geological, and scientific), and other landscape areas through which such trails may pass, as identified in the National Trails System Act. Associated settings are defined as the geographic extent of the resources, qualities, and values or landscape elements within the

surrounding environment that influence the trail experience and contribute to resource protection. In the context of an implementation action NEPA assessment, only those resources, qualities, values, and associated settings potentially affected by the proposed Project would be inventoried. Based on consultation with the BLM, a Trail analysis area for the proposed Project was defined as a 2-mile-wide corridor centered on the trail and clipped to lands within 1 mile of the transmission line alignment centerlines. (See figures F-1 and F-2 for the locations of the trail inventory.)

- **Primary Use or Uses** – The primary use or uses are defined as the authorized mode or modes of travel, and/or activities identified in the National Trails System Act, enabling legislation, or legislative history, through the trailwide CMP or approved RMP.
- **National Trail Right-of-way and Management Corridor** – The National Trail Right-of-way is described as the corridor selected by the National Trail administering agency in the trailwide CMP, which includes the area of land that is of sufficient width to encompass National Trail resources, qualities, values, and associated settings. The National Trail Management Corridor is described as the allocation established through the land use planning process for a public land area of sufficient width within which to encompass National Trail resources, qualities, values, and associated settings and the primary use or uses that are present or that are to be restored.
- **For NHTs, Federal Protection Components (including high-potential historic sites and high-potential historic route segments) and Auto Tour Routes** – Federal Protection Components are those selected high-potential historic sites and high-potential route segments and other land- and water-based components of a designated NHT located on federally owned land that meet the NHT criteria listed in the National Trails System Act, and that are identified in trailwide CMPs, RMPs, and implementation plans. Auto tour routes are defined as those roads that parallel the NHT and provide opportunities to commemorate and/or interpret the historic route as an alternate experience. These opportunities may occur inside or outside the National Trail Management Corridor. Auto tour route opportunities may include access to NHT high-potential historic sites and high-potential historic route segments, although it is not required. Auto tour routes are normally restricted to existing all-weather roads or paved highways and may be limited to specific use conditions, per BLM Manual 6280.
- **National Trail-related National Register of Historic Places Properties** – Includes properties formally determined as eligible for inclusion in and properties listed on the NRHP by the Secretary of the Interior, and all other significant properties that meet NRHP listing criteria. This includes any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior.

## ***Viewshed Analysis***

For NSTs, a viewshed analysis was conducted out to 5 miles from the continuous route alignment to determine an area where the most intense impacts would occur based on the construction, operation, and maintenance of the proposed Project. (This corridor width is the same as the visual resource analysis area identified for Project analysis.) For NHTs, a viewshed analysis was also conducted out to 5 miles from high-potential sites, high-potential segments, and the designated auto tour route. This analysis area allows for focusing the inventory on resources that may be affected by the proposed Project. The viewshed analysis identified landscape features that are seen and not seen from the National Trail. The viewshed was conducted using a geographic information system (GIS)-based visibility analysis technique and then verified during field investigations of affected National Trails. Specifically, the viewshed analyses were conducted:

- at existing recreation and interpretive developments and at critical points that reflect how a trail visitor interacts with the trail, including developed recreation areas such as trailheads, and natural features such as overlook points/pullouts and access points, where identified in the CMP;
- at areas with sensitive resources, qualities, values, and associated settings;
- at regularly spaced intervals along the National Trail tread, trace, and/or management corridor centerline to ensure no gaps in the viewshed analysis; and
- for NHTs, National Trail-related NRHP-eligible and NRHP-listed properties noted in the CMP; other significant historic trail-related features such as river crossings, springs, and stage stations (where applicable); high-potential historic sites and high-potential route segments; auto tour routes; and recreation trails (where applicable) that facilitate public access and opportunities for vicarious experiences.

## **SCENIC RESOURCES**

### **Visual Resource Inventory – Bureau of Land Management Resource Management Plans**

The BLM Visual Resource Management (VRM) system requires the inventory of scenic values and the establishment of management objectives for those values through a VRM planning process. The Visual Resource Inventory (VRI) process and its resulting information provide the information necessary to characterize the existing or affected environment for visual resources, and are required for management and Project-level decisions. The BLM's Manual H-8410-1 (BLM 1986) defines the criteria that define VRI components of scenic quality, SLRUs, distance zones, and VRI classifications. VRI data were provided by the BLM Field Offices (Las Cruces District, Safford, and Tucson) and incorporated into the inventory; and VRI data gaps (i.e., where agency VRI data do not exist or the BLM determines that existing data are insufficient) were identified and updated by the BLM Field Offices for inclusion in the Draft EIS. BLM Manual 6280 requires the use of BLM VRI data (scenic quality, sensitivity levels, and distance zones) to characterize the affected environment for all National Trails.

### **Scenic Quality**

Scenic quality as defined by the BLM is the measure of the visual appeal of a tract of land. In the VRI process, public land is given an A, B, or C rating, based on the evaluation of the following seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Class A scenery typically has a higher degree of landscape relief, diversity of water, and vegetation that harmoniously combine and result in a high level of aesthetic appeal. Class B scenery has less variety in the elements that comprise the landscape, but still has some diversity and visual interest. Class C scenery typically does not have much diversity in terms of landscape features, and rates the lowest from an aesthetic perspective. SQRUs are units of land that characterize the natural landscape setting. These settings are associated with similar features that harmonize with each other and result in a particular landscape character. These SQRUs may range in size from several thousand acres to 100 acres or less, depending on the homogeneity of the landscape features, and take into account man-made features that either enhance or detract from the scenic value. The use of SQRUs to characterize the existing setting of National Trails will provide a consistent definition of setting for all trail resources (visual, recreation, cultural, and biological).

### **Sensitivity Level Rating Units**

SLRUs are a measure of public concern for the maintenance of scenic quality associated with a given tract of BLM land. Public lands are assigned high, medium, or low sensitivity by analyzing the various

indicators of public concern, including type of user, amount of use, public interest, adjacent land uses, and special areas, among other factors. Similar to SQRUs, SLRUs characterize the public value of the natural landscape setting and do not always correlate with the most scenic areas.

## **Distance Zones**

Per BLM guidance, landscapes are subdivided into three distance zones based on relative visibility from public viewing locations (i.e., roads, residences, etc.). The three distance zones that the BLM uses to characterize the visibility of BLM-administered lands are foreground-middleground (0 to 5 miles), background (5–15 miles), and seldom seen (greater than 15 miles).

## **HISTORIC AND CULTURAL RESOURCES**

Historic and cultural resource data pertaining to high-potential sites, high-potential segments, and auto tour routes were obtained from the BLM as outlined in the Anza CMP. For the cultural resources analysis conducted for the EIS, only a Class I records review was conducted. A detailed Class I records review in support of the proposed Project was conducted to identify prior inventories, research, and previously recorded sites within 1 mile of the Project reference centerline for all alternatives corridors considered in the EIS (2-mile corridor).

## **RECREATION**

Land and resource use data that identify existing and planned land uses were collected within the analysis area. In addition, recreation data pertaining to trail-related viewing locations and key observation points were also collected within the analysis area, based on the results described in this EIS. Information was obtained from various federal, state, and local agency staff and documents, including:

- BLM RMPs concerning recreation resources, visual resources, cultural resources, and special management areas, including special recreation management areas, designated off-highway vehicle areas, Wilderness Study Areas, and other authorized land uses that could specifically pertain to National Trails
- New Mexico and Arizona State Parks and Fish and Game Departments
- City and County land use plans
- Aerial imagery
  - Digital Globe Satellite Imagery
  - ESRI<sup>®</sup>

## **NATURAL RESOURCES**

Biological data collected for the EIS (see sections 3.8 and 4.8) were based in part on the results of public scoping and in consultation with the BLM. The following areas of concern were identified with regard to biological resources and were collected within the NST and NHT analysis areas:

- Migratory bird corridors (Pacific flyway) and Audubon Important Bird Areas
- Critical habitat (southwestern willow flycatcher, Mexican spotted owl, northern Mexican garter snake, and Gila chub)
- Riparian habitat and floodplain/cottonwood forest
- Habitat Conservation Areas and Biological Core Areas (Pima County)
- Migration and movement corridors

Based on consultation with BLM and FS trail administrators, NPS trail administrators, and local BLM Field Office resource specialists, vegetation communities occurring within each NST and NHT analysis area were identified and data were obtained from the Resource Geographic Information System (New Mexico) and Arizona Land Resource Information System. Landscape-defining characteristics, including prominent or distinctive aspects, qualities, and characteristics (i.e., wind potential), are identified as part of the rating for natural resources.

## **Other Landscape Elements**

Existing conditions (i.e., cultural modifications such as developments, facilities, etc.) comprise the relatively intact settings for each NST and NHT that may be affected by the proposed Project. Within the NST and NHT analysis areas, existing conditions range from natural, unmodified settings to ones which are culturally modified to a great extent including existing transmission lines (both high- and low-voltage), substations, pipelines (water and high pressure natural gas), travel routes (i.e., road ROWs), residential and commercial development, and other man-made features that affect the natural character of settings. Existing conditions were evaluated by means of aerial photography and coordination with local Field Office specialists to determine the location where modern, recent modifications have affected natural settings, and to the relative degree that these conditions have altered the settings within the analysis area.

Regarding ROWs as they relate to cultural modifications, the Secretary, through the BLM, “may grant easements and rights-of-way upon, over, under, across, or along any component of the National Trails System in accordance with the laws applicable to...[the BLM public lands]...[p]rovided [t]hat any conditions contained in such easements and rights-of-way shall be related to the policy and purposes of...[the National Trails System Act]” (National Trails System Act Sec. 9(a)). To the greatest extent possible, for scenic and historic trails, the BLM shall consider locating proposed ROWs outside of Federal Protection Components, high-potential historic sites, and high-potential route segments; and for NSTs, to areas of comparative disturbance, in accordance with this policy. The BLM may approve proposed ROWs, subject to terms and conditions that are related to the policy and purposes of the National Trails System Act. Through the NEPA process for proposed ROWs, the BLM may permit ROWs that would not substantially interfere with National Trail purposes, and shall make efforts, to the extent practicable, to avoid ROWs that would be incompatible with the purposes for which that National Trail was established, in accordance with law and this policy.

## **Setting Description**

The setting is defined as the geographic extent of the resources, qualities, and values or landscape elements within the surrounding environment that influence the trail experience and contribute to resource protection in context with the proposed Project alternative reference centerlines. For NSTs, the setting description identifies significant scenic or high visual qualities within the analysis area. For NHTs, the setting description identifies areas associated with high scenic quality that support the nature and purpose and/or relative freedom from modern intrusion within and adjacent to high-potential sites and segments.

## **Impact Assessment Methodology**

This section focuses on the identification and characterization of scenic and historic trail impacts associated with the proposed Project. Impacts to National Trails would result from the construction and operation of the proposed transmission lines, substations, ancillary facilities, and access roads. The impact assessment was developed in consultation with the BLM and is consistent with and adheres to BLM guidance pertaining to NSTs and NHTs (BLM Manuals 6250 and 6280).

As part of the NEPA analysis, the proposed Project was evaluated to determine if it would substantially interfere with or be incompatible with the nature and purposes of any National Trails (see section 3.12 of the EIS for description of each National Trail) or equivalent statement (i.e., purpose of trail identified in the National Trails System Act and Congressional Reports). Significant impacts related to scenic and historic trails would be the result of high impacts on key inventoried resource qualities, values, and associated settings from the proposed Project that cannot be effectively mitigated. The following are general descriptions of the criteria for assessing the intensity of impacts that would result from the construction, operation, and maintenance of the proposed Project, and table F-1 presents the criteria used in the assessment.

- **High Impacts**—The intended experience of the trail, gleaned from the nature and purpose or similar language in the National Trails System Act, is no longer possible or is substantially compromised based on the construction and operation of the proposed Project. Impacts cannot be effectively mitigated.
- **Moderate Impacts**—The intended experience of the trail is affected but would not be substantially compromised. Mitigation may or may not be necessary.
- **Low Impacts**—The intended experience of the trail would be affected negligibly. Mitigation would probably not be necessary.

**Table F-1. Assessing Intensity of Impacts to National Trails**

Intensity of Impacts	Criteria for Assessing Intensity of Impacts
<b>High</b>	<ul style="list-style-type: none"> <li>- Scenic Resources <ul style="list-style-type: none"> <li>– Contrast produced by the proposed Project would demand attention and dominate views from the trail centerline where form, line, color, and texture of Project components would be incongruent with existing landscape or historic features.</li> <li>– High-quality, diverse, and rare or unique scenery (Class A or B) would be modified where the setting is a defining factor for the “high-potential route segments” or as seen from historic properties* and/or unevaluated cultural resources and/or interpretive areas, or scenic trail centerlines.</li> </ul> </li> <li>- Historic and Cultural Resources <ul style="list-style-type: none"> <li>– Characteristics of historic properties and/or unevaluated cultural resources located in the trail corridor and seen from the trail centerline would be modified to the extent that the NRHP eligibility of the trail segments and related historic properties and/or unevaluated cultural resources affected would be compromised.</li> </ul> </li> <li>- Recreation, including Travel Management <ul style="list-style-type: none"> <li>– Intact resource values, including recreation and National Trail–related travel management opportunities and values would be substantially compromised by the proposed Project. These values would no longer contribute to the character of the trail.</li> </ul> </li> <li>- Natural Resources <ul style="list-style-type: none"> <li>– Natural values, including any key contributing values and characteristics, would be substantially compromised by the proposed Project (i.e., a riparian area adjacent to a route segment follows what would be cleared for access roads). These values would no longer contribute to the character of the trail.</li> </ul> </li> <li>- Other Landscape Elements <ul style="list-style-type: none"> <li>– Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, subsurface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience. Areas where Project facilities would be located in proximity to, or parallel with (but not immediately adjacent to), landscape modifications that exhibit similar form, line, color, and texture.</li> </ul> </li> </ul>

**Table F-1. Assessing Intensity of Impacts to National Trails (Continued)**

Intensity of Impacts	Criteria for Assessing Intensity of Impacts
<b>Moderate</b>	<ul style="list-style-type: none"> <li>- Scenic Resources <ul style="list-style-type: none"> <li>– Contrast produced by the proposed Project would attract attention from viewers using the trail centerline, and Project components would be co-dominant with existing landscape features.</li> <li>– The inherent quality of interesting, but not outstanding, landscapes (Class B or C) would be modified as seen from historic properties and/or unevaluated cultural resources and/or interpretive areas, or scenic trail centerlines.</li> </ul> </li> <li>- Historic and Cultural Resources <ul style="list-style-type: none"> <li>– Characteristics of historic properties and/or unevaluated cultural resources located in the trail corridor and seen from the trail centerline would be modified to the extent that the NRHP eligibility of the trail segments affected may be compromised, but the effect could be minimized.</li> </ul> </li> <li>- Recreation, including Travel Management <ul style="list-style-type: none"> <li>– Intact resource values, including recreation and National Trail–related travel management opportunities and values, would be modified by the proposed Project but would remain suitably intact and continue to contribute to the character of the trail.</li> </ul> </li> <li>- Natural Resources <ul style="list-style-type: none"> <li>– Natural values, including any key contributing values and characteristics, would be modified by the proposed Project but would remain suitably intact and continue to contribute to the character of the trail.</li> </ul> </li> <li>- Other Landscape Elements <ul style="list-style-type: none"> <li>– Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, subsurface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience.</li> <li>– Areas where Project facilities would be located in proximity to, or parallel with (but not immediately adjacent to), landscape modifications that exhibit similar form, line, color, and texture.</li> </ul> </li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>- Scenic Resources <ul style="list-style-type: none"> <li>– Contrast produced by the proposed Project would not be readily apparent from trail centerlines and would be subordinate in the context of existing conditions.</li> <li>– Minimal change would occur to the existing character of interesting and common landscapes (Class B or C) as seen from historic properties and/or unevaluated cultural resources and/or interpretive areas, or scenic trail centerlines.</li> </ul> </li> <li>- Historic and Cultural Resources <ul style="list-style-type: none"> <li>– Characteristics of historic properties and/or unevaluated cultural resources located in the trail corridor and seen from the trail centerline and the trail segments affected would be modified, but their eligibility for listing on the NRHP would likely not be affected.</li> </ul> </li> <li>- Recreation, including Travel Management <ul style="list-style-type: none"> <li>– Intact resource values, including recreation and National Trail–related travel management opportunities and values, would be modified negligibly by the proposed Project. Contributing values would continue to define the character of the trail.</li> </ul> </li> <li>- Natural Resources <ul style="list-style-type: none"> <li>– Natural values, including any key contributing values and characteristics, would be modified negligibly by the proposed Project. Contributing values would continue to define the character of trail.</li> </ul> </li> <li>- Other Landscape Elements <ul style="list-style-type: none"> <li>– Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, subsurface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience.</li> <li>– Areas where the proposed Project would be located in proximity or parallel to an existing transmission line facility with similar landscape modifications and structural elements in regard to form, line, color, and texture, or screened from viewing locations associated with the trail such that the landscape is perceived to be unaltered.</li> </ul> </li> </ul>

\* Historic Properties are defined in the National Historic Preservation Act of 1966, as amended, as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register, including artifacts, records, and material remains related to such a property or resource.”

## ***Initial Impacts***

The intensity of a potential impact on the trail’s nature and purpose, and resources, qualities, values, associated settings, and primary use or uses would be used as the basis for assessing initial impacts. The detailed methods to determine initial impacts are consistent with agency-approved analysis methods for the National Trails, as well as visual resources, land use and recreation, cultural resources, and

biological resources. (It should be noted that each National Trail has resources, qualities, values, associated settings, and primary use or uses that are unique to the trail; therefore, the resources, qualities, values, associated settings, and primary use or uses may differ between trails and may differ along different segments of the same trail.) The assessment of initial impacts takes into consideration standard mitigation or design features, including but not limited to using non-specular conductors, constructing the towers with dull gray galvanized steel, and employing overland construction techniques where vegetation and topographic conditions allow. A detailed list of standard mitigation measures can be found in the EIS in chapter 2.

## **RESIDUAL IMPACTS**

Potential residual impacts would include direct ground disturbance and temporary increases in ambient noise levels in areas where the proposed transmission line intersect with the CDNST, Butterfield Trail, Arizona NST, and the Anza NHT. Potential increases in ambient noise levels would be temporary and would decrease with the completion of construction activities. Other potential impacts would include changes to the natural qualities, outstanding opportunities for solitude and primitive recreation, and values such as visual resources and visibility from the Trails. Because proposed Project facilities that intersect with Trails would be located adjacent to existing similar facilities, the residual impacts to the Trails would be minor.

## ***Cumulative Effects***

Cumulative effects to National Trails would be evaluated in the context of the trail's resources, qualities, values, associated settings, and primary use or uses in a manner similar to the proposed Project-level impact methodology. Direct and indirect effects would be assessed for both construction and operation activities associated with the proposed Project. Note that individual resource cumulative effects are discussed in section 4.20 in the EIS. To focus the analysis of cumulative effects as they relate to the proposed Project, the analysis area for NSTs would be limited to the continuous trail alignment within the Field Offices traversed by the proposed Project, in consideration of other reasonably foreseeable projects along the National Trail. For NHTs, the analysis area would be limited to the high-potential route segments, high-potential sites, and auto tour routes identified in the areas traversed by the proposed Project, in consideration of other reasonably foreseeable projects along the National Trail. The following methods summarize how cumulative effects will be evaluated for potentially affected National Trails.

## **TRAIL RESOURCES, QUALITIES, VALUES, ASSOCIATED SETTINGS, AND PRIMARY USE OR USES**

1. Scenic and Visual Resources
  - a. Cumulative effects of the incremental modification to the integrity of the associated settings and scenic values for which the National Trail was designated
  - b. Cumulative effects to the naturally appearing landscapes associated with the NST or NHT, regardless of scenic quality rating
2. Cultural and Historic Resources
  - a. Cumulative effects to historic/cultural resources consist of the loss of cultural artifacts, features, or sites that could have cultural significance or could yield important information about the National Trail
  - b. Cumulative impacts to the historic settings, and those characteristics that support the historic setting

3. Recreation, including Travel Management
  - a. Cumulative effects to high-quality recreation opportunities; relative freedom from intrusion; opportunities for vicarious experiences; and conservation, protection, and restoration of National Trail resources, qualities, values, and associated settings
  - b. Cumulative effects to desired recreation setting characteristics
  - c. Cumulative effects to the primary use or uses of the National Trail
  - d. Cumulative effects to the travel systems in the area, including permanent access that could generate more movement in areas that would not have previously been accessible
4. Natural
  - a. Cumulative effects to natural resources (biological, geological, and scientific) relate to ground disturbance and the resulting loss of biological, geological, or other scientific resources
  - b. Cumulative effects to the natural settings that are the geographic extent of the natural landscape elements that influence the trail experience and contribute to resource protection
5. Other Landscape Elements
  - a. Cumulative effects

## REGIONAL SETTING

### National Scenic Trails

#### ***Continental Divide National Scenic Trail***

In southwestern New Mexico, the CDNST follows a route that ranges in elevation from approximately 4,200 to 8,050 feet above mean sea level (amsl) within the Mexican Highland and Datil subdivisions of the Basin and Range and Colorado Plateau physiographic provinces, respectively (Fenneman 1931). The Basin and Range Province is characterized by its isolated, roughly parallel mountain ranges separated by closed (undrained) desert basins. The mountain ranges often run 50 to 70 miles in length and generally trend north-south. The Mexican Highland subdivision is also characterized by basin and ranges and intervening desert plains; however, most of the area has external drainage as opposed to draining internally to basins or bolsons. Mexican Highland vegetation is characterized by creosote, cacti, and yucca at lower elevations, whereas sagebrush and greasewood are dominant at elevations higher than 3,500 feet amsl. The Datil subdivision of the Colorado Plateau contains a greater number of domed, volcanic features than elsewhere in the province and includes the San Mateo, Magdalena, and Black Mountain ranges. This subdivision is characterized by prairie grasslands and rolling piñon-juniper woodland, although the transition between Basin and Range to Colorado Plateau is not distinct. Most of the CDNST in southwestern New Mexico follows the ridgelines of these mountains and foothills, which contain semi-desert grassland vegetation characterized by grasses, shrubs, succulents, and juniper trees along the tops. The landforms in this region are commonly rounded or rolling hills and bajadas, with occasional cliffs or rock spires. Few diverse subdivisions are crossed by the CDNST in southern New Mexico.

#### ***Arizona National Scenic Trail***

The Arizona NST begins at the Arizona–Mexico border, traversing the Basin and Range Province and Colorado Plateau before terminating at the Arizona–Utah border. In southern Arizona, the trail passes

through topography associated with the “Sky Islands,” including the Santa Rita, Rincon, and Santa Catalina Mountains. These ranges run 15 to 25 miles in length trending north-south, which is characteristic of the Basin and Range. These mountain tops are typically occupied by conifer woodland and surrounded by semi-desert grassland at lower elevations, which give the appearance of mountain islands. Specific to the southern region of Arizona, vegetation along the Arizona NST may include a variety of tree species, such as paloverde, ironwood, and mesquite, commonly found along seasonal drainages. Rivers and wetter drainages may have occurrences of cottonwoods, willows, and saltcedar, which is an invasive species. Dense riparian areas are found concentrated along the Cienega Creek near Tucson.

## **National Historic Trails**

### ***Juan Bautista de Anza National Historic Trail***

In Southern Arizona, the Anza NHT passes through a section of the Basin and Range province, the Sonoran Desert.

Mountain ranges that surround the Santa Cruz River corridor near Tucson include the Santa Catalina, Tucson, Tortolita, and the Santa Rita Mountains. Vegetation associated with the Sonoran Desert includes a variety of cacti and succulents; however, creosote is common, mixed with brittlebrush and other lowland desert shrubs. The Sonoran Desert Uplands are typically characterized by a variety of tree species, including paloverde, ironwood, and mesquite, which are commonly found along seasonal drainages. Rivers and wetter drainages may have occurrences of cottonwoods, willows, and saltcedar (an invasive species). Since the Anza NHT follows major river corridors such as the Santa Cruz River in southern Arizona, floodplains and wetland vegetation are common where portions of the river are not channelized or urbanized (i.e., Tucson and Marana).

## **Trails Recommended as Suitable for National Trail Designation**

### ***Butterfield Overland Mail and Stage Route***

Similar to the Anza NHT, the Butterfield Trail traverses the Basin and Range province in New Mexico and Arizona. The Butterfield Trail crosses through the Mexican Highland subdivision of this province in New Mexico and the Sonoran Desert in Arizona. These subdivisions are characterized by smaller mountain ranges, rock pediments (sloping solid rock), and basins that typically have external drainage as opposed to draining internally to basins and bolsons. Mexican Highland vegetation is characterized by creosote, cacti, and yucca at lower elevations, whereas sagebrush is dominant at elevations higher than 3,500 feet amsl. Vegetation associated with the Sonoran Desert includes a variety of cacti and succulents; however, creosote is common mixed with brittlebrush and other lowland desert shrubs. The Sonoran Desert Uplands are typically characterized by a variety of tree species, including paloverde, ironwood, and mesquite, which are commonly found along seasonal drainages. Rivers and wetter drainages may have occurrences of cottonwoods, willows, and saltcedar (an invasive species). Throughout these subdivisions, the occurrences of springs provided water for historic-era trail users and were key to the establishment of stations along the stage route. Near Tucson, the Butterfield Trail followed a portion of the Santa Cruz River corridor, primarily because water was present throughout the year; thus floodplain and/or wetland vegetation are common. The majority of the Santa Cruz River in Tucson has been channelized or developed by industrial and residential uses and floodplain vegetation is marginal.

## INVENTORY RESULTS

### National Scenic Trails

#### *Continental Divide National Scenic Trail*

##### NATURE AND PURPOSE

One of the primary purposes of the CDNST is to provide a “continuous, appealing” route designed for travel by hikers and equestrians, as well as other compatible land uses. While in some instances the trail is located along roads that would allow motor vehicle use, the intention for future development is to relocate the trail entirely off-road, to limit use to non-motorized recreation. In 1997, a Forest Service Memorandum clarified this intent, stating that “It is the intent of the Forest Service that the CDNST will be for non-motorized recreation...Allowing motorized use on these newly constructed trail segments would substantially interfere with the nature and purpose of the CDNST” (FS 1997). In 2009, the amended CMP describes the nature and purposes of the CDNST as “to provide high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the CDNST corridor” (FS 2009:4).

##### RESOURCES, QUALITIES, AND VALUES, AND ASSOCIATED SETTINGS

###### Scenic Resources

###### *Scenic Quality Rating Units*

The CDNST analysis area near Lordsburg, New Mexico, traverses Class C scenic quality associated with Chihuahuan semi-desert plains. The Lordsburg Valley is characterized by low, sparse shrub vegetation that typically surrounds smaller mountain ranges and foothills. The adjacent Big Burro Mountains, located to the north, are associated with Class B scenic quality where unique pyramidal or conical peaks with steep rock cliffs are typical. From the Lordsburg Valley, the CDNST crosses through these mountains within the Gila National Forest north of Lordsburg.

###### *Sensitivity Level Rating Units*

The majority of the CDNST analysis area is associated with high sensitivity, which includes the I-10 corridor. Areas associated with moderate sensitivity include the Big Burro Mountains. Low sensitivity lands generally occur in flat valley areas with few local travel routes north of Lordsburg.

###### *Distance Zones*

The CDNST analysis area occurs within the foreground-middleground distance zone. Viewers associated with this distance zone include travel route viewers along I-10 and other major travel routes in the Lordsburg vicinity.

###### *Historic and Cultural Resources*

The 2009 *Continental Divide National Scenic Trail Comprehensive Plan* (Comprehensive Plan) (FS 2009) does not identify specific historic or cultural resources associated with this segment of the CDNST, although the Butterfield Trail crosses the CDNST in the town of Lordsburg.

### ***Recreation***

Consultation with the BLM Las Cruces District confirmed that ROS data were not available within the CDNST analysis area. Project-level information relating to recreation viewers was used, as well as information in the Comprehensive Plan relating to desired visitor experiences and interpretive facilities. The Comprehensive Plan states that on lands administered by the BLM, the CDNST is considered a high sensitivity level travel route. There are no developed recreational facilities for the CDNST in the analysis area. Connecting travel routes may provide access for trail users and were inventoried as a resource value. Trail users in Lordsburg may be limited to access points near State Route 90 and local roads south of Lordsburg, including State Route 494 and Animas Street. The location of the trail through Lordsburg primarily provides the trail user services (e.g., shopping for supplies and accommodations) rather than primitive or semi-primitive non-motorized recreation experiences as identified in the Comprehensive Plan.

### ***Natural Resources***

The Comprehensive Plan does not identify specific natural resources, including biological, geological, and scientific resources for the CDNST in the analysis area. Based on the proposed Project-level data, the Lordsburg Valley is characterized by Chihuahuan semi-desert grassland vegetation. The desert foothills of the Big Burro Mountains support mostly grasses and shrubs, as well as occasional juniper, and a desert drainage dissecting it is occupied by xeroriparian scrub. There are no perennial streams, washes, intermittent streams, wetlands, or playas within the CDNST analysis area. The Animas Valley (wholly containing the smaller Lordsburg Valley) is bounded by the Peloncillo Mountains to the west, the Animas and Pyramid Mountains to the east, and Burro Mountains to the north.

### ***Other Landscape Elements***

The CDNST traverses the developed area of Lordsburg that is associated with urban residential, commercial, industrial, and rural residential development. I-10 is a major interstate travel corridor that bisects the town. Other major travel routes interconnecting with I-10 include State Route 90, which heads northeast to Silver City, and State Route 70, which heads northwest towards Duncan, Arizona. The CDNST analysis area south of Lordsburg is traversed by several underground pipelines; the West-wide Energy Corridor is also located south of these utilities. The CDNST analysis area north of Lordsburg is also traversed by several utilities, including a 115-kilovolt (kV) transmission line, a 345-kV transmission line, two pipelines, and the Hidalgo Substation. In this panoramic valley landscape, the development of Lordsburg is visible to trail users from within the analysis area.

### ***Setting Description***

The analysis area for the CDNST occurs primarily within the developed area of Lordsburg and the rural areas of Lordsburg Valley. In areas south of Lordsburg, cultural modifications that have locally modified the landscapes in the CDNST analysis area include local transportation routes (State Route 494 and Animas Road), development and residences associated with the city of Lordsburg, the I-10 corridor, underground pipelines, and the Southern Pacific Railroad. In addition, development associated with the ghost town of Shakespeare and the ghost town and associated abandoned mine of Valedon have locally modified the landscapes. The area north of Lordsburg in the CDNST analysis area is also traversed by several utilities, including a 115-kV transmission line, a 345-kV transmission line, two pipelines, and the Hidalgo Substation. The Comprehensive Plan acknowledges that isolated portions of the trail may pass through developed areas where there are few primitive or semi-primitive recreational opportunities. The adjacent mountain ranges and peaks surrounding the Lordsburg Valley may be the only landscapes associated with high scenic or visual quality for the CDNST in the Lordsburg vicinity. More natural

landscape settings occur for the trail north of Lordsburg near the Big Burro Mountains; however, cultural modifications such as the existing transmission lines and Hidalgo Substation are dominant.

## **PRIMARY USE(S)**

The primary use of the CDNST is to provide recreational opportunities of national significance, as the 3,100-mile trail traverses from Mexico to Canada. The Comprehensive Plan identifies the CDNST as a trail for users to enjoy a greater diversity of physical, social, and managerial settings than found on any other extended NST.

## **NATIONAL TRAIL RIGHT-OF-WAY AND MANAGEMENT CORRIDOR**

The Comprehensive Plan identifies a 50-mile-wide “zone of concern” that lies on either side of the geographical Continental Divide. The Comprehensive Plan states that initial trail location and subsequent relocation of ROWs may occur within this zone of concern without further Acts of Congress. It further states that the trail should be located as close to the geographic Continental Divide as possible, but as far away as necessary to provide an economically feasible, environmentally compatible route that offers safe travel and diverse recreational experiences. Based on this information, it is assumed that the trail ROW and management corridor could potentially occur within this zone of concern, although the width of these areas is not explicitly stated.

## **NATIONAL TRAIL–RELATED NATIONAL REGISTER OF HISTORIC PLACES PROPERTIES**

There are no known NRHP properties associated with the CDNST analysis area.

### ***Arizona National Scenic Trail***

## **NATURE AND PURPOSE**

Because the Arizona NST has not been described in a trail feasibility study, comprehensive plan, or CMP, the nature and purpose of the trail have yet to be defined in Federal policy. However, references to the trail in its 2009 congressional designation emphasize its intention as a non-motorized, multi-use recreational trail, in a manner consistent with the National Trails System Act of 1968. Senate Report 110-290 on S. 1304 (The Arizona National Scenic Trail Act), April 10, 2008, describes the Arizona NST’s background and need: “The trail is intended to be a primitive, long distance trail that highlights the State’s topographic, biologic, historic, and cultural diversity.” In support of this designation, U.S. Senator John McCain (AZ) referred to the “rugged, spectacular scenery” and “the wide range of ecological diversity in the state” found along the trail, lending his support to its designation as an NST in order to “ensure the preservation of a corridor of open space.”

## **RESOURCES, QUALITIES, AND VALUES, AND ASSOCIATED SETTINGS**

### **Scenic Resources**

#### ***Scenic Quality Rating Units***

The Arizona NST analysis area near Vail, Arizona is characterized by more traditional Sonoran Desert vegetation, including saguaro, mixed cacti, and shrub species along with the occasional drainages, which typically contain paloverde or other desert trees. The topography within the Arizona NST analysis area is typically rolling with V-shaped ridgelines, and is associated with Class B scenery, as well as upper bajadas where the topography is more rolling, with large V-shaped dissections that resemble small, rolling

foothills, where gently sloping bajadas occur at the base of the adjacent Rincon and Empire Mountain ranges. Vegetation is typically diverse on these bajadas and may include mesquite, acacia, creosote, ocotillo, and cholla species. Slightly undulating terrain is dissected by washes and contains a greater variety of upland Sonoran Desert vegetation, including mesquite, paloverde, and ironwood trees. This area is a transitional area between Chihuahuan and Sonoran Desert species where cacti, yucca, agaves, and other shrub and grass species are mixed.

### ***Sensitivity Level Rating Units***

The analysis area for the Arizona NST is delineated as high sensitivity.

### ***Distance Zones***

The Arizona NST analysis area occurs within the foreground-middleground distance zone. Viewers associated with this distance zone include trail viewers, I-10, and other major travel routes.

### ***Historic and Cultural Resources***

Cultural resources associated with the Arizona NST corridor have not been fully inventoried, since a comprehensive plan or CMP is still undergoing development. The Butterfield Trail (recommended as suitable) historically occurred along the valley between the Rincon Mountains and Santa Rita Mountains and crosses the Arizona NST near Cienega Creek, approximately 6 miles north of where the proposed Project would cross the Arizona NST. Although the exact location of the Butterfield Trail in this area is not documented at this time, it is likely that the perennial waters of Cienega Creek were a key reason to establish the Cienega Creek Station for the overland route.

### ***Recreation***

Consultation with the BLM Tucson Field Office confirmed that ROS data were not available within the Arizona NST analysis area. Project-level information relating to recreation viewers was used.

The portion of the Arizona NST that occurs within the analysis area near Vail receives among the highest amount of use trailwide because of the close proximity to the Tucson metropolitan area and other recreation attractions such as Cienega Creek National Conservation Area, Colossal Cave, Saguaro National Park, and the Rincon Mountains Wilderness. The trail alignment passes through Colossal Cave Mountain Park (a Pima County recreation area), and trail users can access the cave by following a connecting unpaved road for approximately 1 mile. Other developed recreation facilities within this park include picnic areas and La Posta Quemada Ranch, which is a day ranch for horseback riding. Cienega Creek Natural Preserve is a Pima County recreation area that requires a permit to enter (refer to section 3.14 of this EIS). The Gabe Zimmerman Davidson Canyon trailhead provides parking and access to the preserve, as well as access to the Arizona NST, which traverses the preserve. Use of the trail is common in this area by birders, hikers, and equestrians, as well as by mountain bikers who commonly travel from Pistol Hill Road to the Cienega Creek. The town of Vail is identified by the Arizona Trail Association as a Gateway Community and is located to the northwest of the trail off I-10. Several travel routes in the area may serve as a resource value for the trail, including designated scenic routes State Route 83 (Patagonia Scenic Byway) and I-10 (Pima County designation), which provide regional access to the trail. Other local travel routes that serve as a resource value for the trail include the Old Spanish Trail, Pistol Hill Road, and Pantano Road.

### ***Natural Resources***

Based on Project-level data, the Arizona NST analysis area near Vail is characterized by gently sloping bajadas that occur at the base of the adjacent Rincon and Empire Mountain ranges. This area is also a

transition zone between the Sonoran and Chihuahuan Desert vegetation communities, which results in a mixed desert cacti landscape and semi-desert grassland. Cienega Creek is identified as an important water, wildlife, and recreation resource in southern Arizona. It is also a unique and rare low-elevation perennial water resource that contains mature cottonwood gallery forests and dense mesquite bosques. Diverse wildlife species are supported by Cienega Creek, including native fish, birds, and amphibians, many of which are rare or threatened and endangered. Cienega Creek is classified as an “outstanding state resource water” by the Arizona Department of Environmental Quality. Cottonwood gallery forests are found concentrated along the lower portions of Davidson Canyon and La Posta Quemada Wash. Ephemeral washes that cut across bajadas and into the surrounding valley landscapes support xeroriparian vegetation. These include the upper portions of Davidson Canyon and La Posta Quemada Wash. There tends to be less variety and density of riparian vegetation along these smaller drainageways.

### ***Other Landscape Elements***

There are numerous cultural modifications and existing utilities within the Arizona NST analysis area. These include a dirt road and shelters associated with Colossal Cave Mountain Park, I-10, three paved roads (Pantano Road, Charolais Road, and State Route 83), the Southern Pacific Railroad, two bridges for transportation infrastructure, and existing 345-kV transmission lines. In some instances, these features dominate the view, but rolling terrain partially screens these developed facilities. Residential development also occurs on the foothills of the Rincon Mountains, which is within the Arizona NST analysis area. Many of these features can be seen along the trail as it parallels Davidson Canyon between the vicinity of the Gabe Zimmerman trailhead and the trail’s crossing of Charolais Road.

### ***Setting Description***

The Vail, Arizona landscape is characterized by rural residential development, rolling hills, and upper Sonoran Desert vegetation with cultural modifications evident near the trail. Three 345-kV transmission lines cross the analysis area and parallel the Arizona NST near Cienega Creek north of I-10. Three underground pipelines also cross the Arizona NST near I-10. South of I-10, several other transmission lines cross the trail, including 115-kV, 138-kV, 230-kV, and 345-kV transmission lines that share the same utility corridor entering Tucson from the east. Cienega Creek, Davidson Canyon, and the adjacent mountain ranges and peaks surrounding this area south of Tucson are associated with high scenic or visual quality for the trail. More natural landscape settings occur for the Arizona NST as it proceeds north through this developed rural area of Tucson and Vail into Saguaro National Park. Cultural modifications such as I-10 and utility corridors are evident and dominate this enclosed landscape.

## **PRIMARY USE(S)**

A comprehensive plan or CMP for the Arizona NST has not been completed; therefore, primary use is not defined. Although Senate Report 110-290 on S.1304 (April 10, 2008) states that “[t]he primary uses are expected to be hiking, equestrian use, and mountain bicycling,” and House Report No 90-1631 states that “the use of motorized vehicles by the general public along any national scenic trail shall be prohibited,” motorized use does occur on the Arizona NST where it is located alongside existing roads, such as Tiger Mine Road.

## **NATIONAL TRAIL RIGHT-OF-WAY AND MANAGEMENT CORRIDOR**

A comprehensive plan or CMP for the Arizona NST has not been completed; therefore, the trail ROW and Management Corridor are not defined.

## **NATIONAL TRAIL–RELATED NATIONAL REGISTER OF HISTORIC PLACES PROPERTIES**

A comprehensive plan or CMP for the Arizona NST has not been completed; therefore, National Trail–related NRHP properties have not been identified.

## **National Historic Trails**

### ***Juan Bautista de Anza National Historic Trail***

#### **NATURE AND PURPOSE**

The nature and purpose of the Anza NHT is described as a vision for “a traveler to be able to hike, ride horseback, bicycle, and drive on a marked route from Nogales to San Francisco and the loop in the eastern portion of San Francisco Bay” (NPS 1996:7). Along the way, the visitor can experience landscapes similar to those the expedition saw; learn stories of the expedition, its members, and descendants; better understand the American Indian role in the expedition and the diversity of their cultures; and appreciate the extent of the accomplishments of Juan Bautista de Anza and his colonizers.

#### **RESOURCES, QUALITIES, AND VALUES, AND ASSOCIATED SETTINGS**

##### **Scenic Resources**

###### ***Scenic Quality Rating Units***

The Santa Cruz River comprises the majority of the Anza NHT analysis area within or near Tucson, Arizona. There is no BLM land associated with this trail corridor in the analysis area and the landscape immediately adjacent to the river has been developed. The river corridor has also been highly modified and is primarily channelized throughout its length in Tucson, including paving the banks of the river.

###### ***Sensitivity Level Rating Units***

Moderate sensitivity is associated with the Anza NHT in the analysis area.

###### ***Distance Zones***

The Anza NHT analysis area occurs within the foreground-middleground distance zone. Viewers associated with this distance zone are based primarily on travel route viewers along I-10 and local Tucson streets.

##### ***Historic and Cultural Resources***

Unlike the heavily traveled Butterfield Trail, the Anza NHT represents an exploratory and short-lived colonization route that is “remembered primarily for the expeditions that forged the land route which lead to the founding of the city of San Francisco” (Gough 2012). Due to this circumstance, evidence for the physical remains for the trail blazed by the two Anza expeditions is essentially non-existent. However, the NPS has designated a trail route and identified a number of historically significant sites throughout Arizona and California.

Criteria for historic sites consist of historically significant resources that exhibit at least one direct association with the Anza NHT, the presence of historical remains, scenic qualities, and few intrusions. Interpretive sites include “at least one significant, direct connection to the Anza expeditions, and a high

potential to commemorate the trail's significance or to interpret American Indian, Spanish colonial, or natural history related to the expedition, even though the sites may not retain their historic integrity" (NPS 1996).

Historically significant sites associated with the trail in Arizona, but not the trail analysis area, include historic missions and settlements such as the Mission San Xavier del Bac and various expedition campsites. NPS sites associated with the trail include Tumacácori National Historic Park and Casa Grande Ruins National Monument (NPS 1996).

### ***Recreation***

For the proposed Project, the Anza NHT is primarily associated with the developed area of Tucson; thus, data pertaining to ROS are not applicable. Project-level information relating to recreation viewers was used, as well as information in the CMP relating to desired visitor experiences and interpretive historic/cultural facilities.

The CMP identifies visitor use along the Anza NHT as opportunities to hike, bike, ride horseback, and tour by motor vehicle. Recreational retracement routes provide a multiple use, non-motorized, off-road continuous trail that connects federal components and high-potential segments. The Santa Cruz River is identified as an interpretive region or theme that corresponds to the six geographic areas along the trail between Nogales and San Francisco. This river park contains a developed recreational trail along the Santa Cruz River, which extends through the Tucson metropolitan area north through Marana. There are plans for recreational trail development within the river corridor within the Tucson metropolitan area. Within the Anza NHT analysis area, I-10 from Tucson to Marana is identified as the designated auto tour route (although it is not currently signed for the entire route) and is a Pima County–designated scenic road. An alternative auto tour route that generally follows Mission and Silverbell Roads travels near the historic corridor, and provides access to a recreational trail along the Santa Cruz River Parkway. There is a high-potential historic interpretive site in the Christopher Columbus Park north of the Santa Cruz River Park (interpretive signs and a new trailhead are located here).

### ***Natural Resources***

Since the Anza NHT primarily follows major river corridors in the analysis area, floodplains and wetland communities were common vegetation communities encountered by historic-era trail users. In the Sonoran Desert, the Santa Cruz River flowed both aboveground and belowground in large floodplains. Historically, water pumping for agricultural, residential, and urban use have contributed to the reduced flow, furthered by river channelization. Invasive tree species have also changed the vegetation community along the river. Threatened and endangered species that may occur within the trail analysis area would primarily be associated with cottonwood forest galleries or mesquite bosques habitat areas, which do not occur within the analysis area of the developed area of Tucson.

### ***Other Landscape Elements***

Cultural modifications within the Anza NHT analysis area include development associated with Tucson, such as industrial, commercial, and residential areas. Existing 115-kV and 138-kV transmission lines occur within portions of the Santa Cruz River parkway and are immediately adjacent to the Anza NHT. The I-10 corridor and channelized river modifications are also adjacent to the Anza NHT. The CMP acknowledges that many portions of the historic route pass through urban or highly developed areas where there is little or no semblance of how the landscape appeared during the Anza expedition.

### ***Setting Description***

The Anza NHT occurs within the developed area of Tucson, primarily along a channelized river corridor that parallels I-10 and several transmission lines, including the existing transmission line proposed by Southline as part of the Upgrade Section. The CMP acknowledges that many portions of the historic route pass through urban or highly developed areas where there is little or no semblance of how the landscape appeared during the Anza expedition. In this area, the Santa Cruz River Parkway is the developed Anza recreational trail. The adjacent mountain ranges and peaks surrounding Tucson may be the only landscapes associated with high scenic or visual quality for the Anza NHT in this area and are identified in the CMP as landscape features that correspond to expedition journals.

### **PRIMARY USE(S)**

As defined in the CMP, “management objectives for visitor experience emphasize promotion of public understanding, appreciation, and enjoyment of the Anza Trail [Anza NHT] and outdoor recreation” (NPS 1996:2). These objectives are obtained by conveying the experience of the colonists in settings similar to those of 1775, providing accurate interpretation at certified locations, and linking historic sites and trail segments with a recreational trail and an auto route.

### **NATIONAL TRAIL RIGHT-OF-WAY AND MANAGEMENT CORRIDOR**

The Anza NHT Right-of-way and Management Corridor is not explicitly identified in the CMP, with the exception of the following statement: “the Anza NHT is defined as a historic trail corridor, an area of varying widths depending upon the specifics of the terrain and the historic and archaeological evidence” (NPS 1996:3). The Anza NHT historic corridor and potential alignments of the Anza recreational trail are delineated in the Map Supplement to the CMP.

For NHTs, Federal Protection Components include high-potential route segments, high-potential sites, and auto tour routes.

### **NATIONAL TRAIL–RELATED NATIONAL REGISTER OF HISTORIC PLACES PROPERTIES**

There are no National Trail–related NRHP properties within the Anza NHT analysis area.

## **Trails Recommended as Suitable for National Trail Designation**

### ***Butterfield Overland Mail and Stage Route (Historic)***

The Butterfield Trail is currently being evaluated by the Secretary of the Interior (National Park Service) for potential nomination as an NHT. Resource protection and preservation of historic and cultural sites, as well as associated scenery, are anticipated if this trail is congressionally designated. Similar to other National Trails, the values, characteristics, and settings for Butterfield Trail would likely include scenic resources, historic and cultural resources, recreation, and other resources as subsequently described.

## **VALUES, CHARACTERISTICS, AND SETTINGS**

### **Scenic Resources**

#### ***Scenic Quality Rating Units***

The majority of the Butterfield Trail analysis area between Las Cruces, New Mexico, and Willcox, Arizona traverses Class C scenic quality associated with Chihuahuan semi-desert plains. These flat plains or valleys are characterized by low, sparse shrub vegetation that typically surrounds smaller mountain ranges and foothills. These flat valley areas include the Deming, Lordsburg, and San Simon valleys. The adjacent mountain ranges are characterized by unique pyramidal or conical peaks with steep rock cliffs. These ranges include the Big Burro Mountains and Peloncillo Mountains, which are associated with Class B scenic quality. Lordsburg Mesa is also associated with Class B scenic quality where rolling hills are dissected by drainages containing a greater variety of desert vegetation. In Tucson, the landscape setting is highly developed; therefore, SQRUs are not delineated.

#### ***Sensitivity Level Rating Units***

The majority of the Butterfield Trail analysis area is associated with high sensitivity and includes Cooke's Range, the I-10 corridor, the Peloncillo Mountains, and the Rincon Mountains. Areas associated with moderate sensitivity include other major travel routes that connect to I-10. Low sensitivity lands generally occur in flat valley areas, with few local travel routes near Lordsburg and the Arizona–New Mexico border and the metropolitan Tucson area.

#### ***Distance Zones***

The Butterfield Trail analysis area occurs within the foreground-middleground distance zone. Viewers associated with this distance zone include travel route viewers along I-10 and other major travel routes.

#### ***Historic and Cultural Resources***

The historic southern route of the Butterfield Trail extended some 2,800 miles from St. Louis, Missouri and Memphis, Tennessee to San Francisco, California. From 1858 to 1861, the Butterfield Overland Mail Company operated a stagecoach line and provided mail service along this route. Although the company was short-lived, the route remained the principal southern travel corridor to the Pacific coast until the construction of the Southern Pacific Railroad in the early 1880s.

In general, remaining trail sections consist of discontinuous segments of various lengths that have been identified within a specific geographic area. On rural landscapes, these segments may appear as swales or depressions that may exhibit traces of wagon ruts, or may consist of modern road alignments superimposed on the trail. Although a modern road alignment may have obscured or eliminated all traces of a former trail, the trail segment may retain aspects of its historic integrity in regards to setting, feeling, and location.

In addition to physical remains of the trail, a number of culturally and historically significant sites, indirectly or directly associated with the operation of the trail, lie along its length across New Mexico and Arizona. These sites may include, but are not limited to, natural springs, stage stations, trail/survey markers, military installations (camps and forts), and conflict sites (ambush/massacre and battlefield sites).

Selection of the trail route used by the Butterfield Overland Mail Company was contingent on a number of factors, including the availability of water. Due to this circumstance, many stage stations were

constructed in close proximity to natural water sources, such as Cooke's Spring and Cow Springs (Ojo de las Vacas) in New Mexico, and Dragoon Springs in Arizona. In most cases, use of the water resources at these locations has occurred for centuries, if not millennia. In addition to their historical significance, springs such as these are generally considered spiritually significant to Native Americans.

During its period of operation (1858–1861), the Butterfield Overland Mail Company constructed a number of home and swing stage stations along its length to resupply stages with fresh provisions, drivers, and teams. In general, stage stations were constructed at 20-mile intervals; however, distances varied due to the terrain and availability of water. Swing stations, also called changing or relay stations, were used to provide a change of teams for the coaches. These stations typically consisted of a single house structure and corral, and were not intended to provide services or amenities to passengers. On average, stagecoaches would spend 10 minutes at a swing station while the teams were changed out (Couchman 1990). Home stations (e.g., Mesilla Station), which occurred with less frequency along the route, provided more substantial amenities; in addition to teamsters, home stations typically housed a stationmaster, herders, harness makers, and blacksmiths. These locations typically afforded stage passengers the opportunity to purchase additional supplies.

The Butterfield Trail route was also a primary transportation corridor for military operations in the New Mexico Territory, and remained so throughout much of the late nineteenth century. Four historic military installations have been identified along the trail length: Fort Fillmore (Mesilla), Fort Cummings, Camp Mimbres, and Fort Bowie. Fort Fillmore and Fort Bowie served as stagecoach stops during the period the Butterfield Overland Mail Company was in operation, and both remained important posts throughout the Civil War and subsequent Apache Wars. Fort Cummings and Camp Mimbres were constructed after the Confederacy's failed New Mexico Campaign of 1862. Fort Cummings, constructed to protect the stage route and to control the Apachean groups in the region, remained in operation until the end of the Apache Wars. Camp Mimbres appears to have served only as a temporary cavalry camp for elements of the California Column, and was abandoned shortly after the war.

A number of historically significant events associated with civilian and military conflicts occurred along the Butterfield Trail route through western New Mexico and eastern Arizona. Although the locations for some these events are known, the majority of sites remain speculative or unidentified. In New Mexico, one of the most notorious stretches of the Butterfield Trail consisted of a 4-mile span extending through Cooke's Canyon. Throughout the 1860s, and even as late as 1880, the pass was infamous for Apache attacks and ambushes that left an estimated 400 emigrants, soldiers, and civilians dead by the roadside. In Arizona, a series of events associated with the New Mexico Campaign (1862) occurred along the Butterfield Trail, including the First and Second Battle of Dragoon Springs, the Battle of Picacho Pass, and the Battle of Apache Pass.

### ***Recreation and Other Resources***

Based on previous CMPs developed for the Juan Bautista de Anza NHT, it is likely that trail-related interpretation and education opportunities would be encouraged and supported. Recreational opportunities would likely involve similar companion trails for hiking, biking, or horseback riding in order to convey the experience of the historic-era travelers, in settings similar to those that once existed along the Butterfield Trail. In Lordsburg, the Butterfield Trail crosses the CDNST, which may provide some interpretive opportunities for both National Trails. In Arizona, the Butterfield Trail crosses the Arizona Trail and the Anza NHT in the Tucson vicinity, although there are no existing interpretive opportunities for the trail at these crossings. Major travel routes that cross the Butterfield Trail are limited to I-10 and State Route 26, which are considered a potential recreation resource value for this assessment.

### ***Setting Description***

A portion of the Butterfield Trail occurs primarily within the developed area of Lordsburg and the rural areas of Lordsburg Valley. Within the valley, several existing cultural modifications are evident, including the pipeline corridors to the south, I-10, and transmission line corridors to the north. The adjacent mountain ranges and peaks surrounding the Lordsburg Valley may be the only landscapes associated with high scenic or visual quality for the trail in this area. More natural landscape settings occur for the trail north of Lordsburg near the Big Burro Mountains; however, cultural modifications such as the existing transmission lines and Hidalgo Substation are dominant. Near the Arizona–New Mexico Border, the Butterfield Trail crosses through the Peloncillo Mountains, which are associated with high visual quality; however, an existing underground pipeline also passes through these mountains. In addition to the I-10 and rural residences associated with San Simon, this pipeline is one of the few cultural modifications in the trail analysis area. Portions of the West-wide Energy Corridor occur within the analysis area as well.

The trail analysis area near Vail includes several cultural modifications. Near the Butterfield Trail alignment, three 345-kV transmission lines traverse the analysis area and may parallel the trail alignment north of I-10. One underground pipeline also crosses the analysis area north of I-10. Cienega Creek and the adjacent mountain ranges and peaks surrounding this area south of Tucson are associated with high scenic or visual quality for the Butterfield Trail. Cultural modifications such as the I-10 and utility corridors are evident and dominate this loosely enclosed landscape. As the Butterfield Trail enters the urban area of Tucson, the landscape setting becomes increasingly developed and dominates the setting. The Butterfield Trail alignment under study also occurs within the developed area of Tucson, primarily within the Santa Cruz River, which is a channelized river corridor that is parallel to I-10 and several transmission lines. The adjacent mountain ranges and peaks surrounding Tucson may be the only landscapes associated with high scenic or visual quality for the historic trail in this area. More natural landscape settings occur for the Butterfield Trail alignment north of Tucson near the Tortolita Mountains; however, cultural modifications such as I-10 are evident, but not as dominant as the urban area of Tucson.

## **IMPACT ANALYSIS RESULTS**

A summary table of each route group and the potential intersections with National Trails therein is included at the end of this section (table F-2). Map panels for visual and recreation resources (see figures F-4 through F-24); cultural, biological, and other natural resources (see figures F-25 through F-45); and composite impact assessment results (see figures F-46 through F-66) are provided at the end of this section.

### **Route Group 1: Afton Substation to Hidalgo Substation**

#### ***National Historic Trails***

There are no NHTs in the analysis area for route group 1.

## ***National Scenic Trails***

### **CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL**

#### **Subroute 1.1**

##### ***Scenic and Recreation Resources***

The CDNST would be crossed by segment P4a (refer to table F-2, CDNST-1) of subroute 1.1. Table F-2 is provided at the end of this section. The point of intersection would be approximately 0.5 mile southwest of the existing Hidalgo Substation, on New Mexico State land. This area traverses Class C scenery associated with moderate sensitivity, where the CDNST crosses an existing 115-kV transmission line. The general form and line of the proposed Project would replicate the existing line visually, although the scale of the facilities are different; thereby minimizing the resulting level of contrast to scenic resources that would be traversed. Low impacts to these scenic resources are anticipated because the level of change associated with the proposed Project would be congruent with this landscape and its existing conditions.

Impacts are anticipated to be low and minor to the recreation proposed Project would be located along previously occupied ROWs within the Lordsburg Valley, and would not conflict with any recreation management prescribed by the Mimbres RMP. There are no trailheads, informational kiosks, or recreational opportunities of national significance along the segment of the CDNST that would be intersected by segment P4a. The Mimbres RMP specifies that “facilities will not be located parallel to the CDNST” (BLM 1993:5-49) The proposed crossing of the CDNST by segment P4a would be a perpendicular crossing, and the Project segment would not parallel the CDNST for any distance.

The CDNST is a recreation and conservation-oriented corridor that “provides high quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the CDNST corridor” (FS 2009:4). The trail analysis area northeast of Lordsburg is associated with the rural and existing utility development and is not reflective of a scenic or primitive hiking experience in terms of landscape setting. It is anticipated that primitive hiking or horseback riding recreation settings would not be substantially degraded as a result of the proposed Project. Further, the construction, operation, and maintenance of the proposed Project would not substantially interfere with the use and enjoyment of the CDNST at this location.

The proposed Project would not limit the agency’s ability to manage the trail for the protection and conservation of natural, historic, or cultural resources, because these resources would not be substantially impacted by the proposed Project within the analysis area.

##### ***Historic and Cultural Resources***

The 2009 Comprehensive Plan does not identify specific historic or cultural resources associated with this segment of the CDNST.

## ***Trails Recommended as Suitable for National Trail Designation***

### **BUTTERFIELD OVERLAND MAIL AND STAGE ROUTE (HISTORIC)**

#### **Subroutes 1.1 and 1.2**

##### ***Scenic and Recreation Resources***

Just south of the Langford Mountains, approximately 10 miles east of Lordsburg, segment P2 (refer to table F-2, Butterfield-1) would cross the Butterfield Trail, in Class C scenery associated with high to moderate sensitivity while in the same viewshed as an existing 115-kV transmission line and I-10. Similarly, segment S8 (refer to table F-2, Butterfield-2) of subroute 1.2 would cross the Butterfield Trail in Class C scenery, paralleling the existing highway corridor for New Mexico State Route (NM) 113. Both intersections would occur on New Mexico State land. High sensitivity is associated with Big Burro Mountain landscape to the north and would result in low-moderate impacts to these scenic resources within the trail analysis area. Moderate sensitivity is associated with the foothills of the Lordsburg Valley plains to the west, and would result in low impacts to these scenic resources for a small portion of the proposed Project within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

##### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor. Subroutes 1.1 and 1.2 would have minor impacts on the characteristics that make the trail worthy of designation as an NHT. Segment P2 (refer to table F-2, Butterfield-1 and figure F-4) would cross the Butterfield Trail adjacent to a Butterfield Trail Related Segment. “Butterfield Trail Related Segments” are defined as areas of the Butterfield Trail that have known locations either from existing studies, physical evidence, or are managed for interpretive use. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as to potential NRHP-listed properties, including remnants and artifacts from the associated period of use that may be eligible to or listed on the NRHP, which qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency’s ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The Mimbres RMP specifies that “facilities will not be located within ¼ mile of any stage station on the Butterfield Trail.” (BLM 1993:5-47). The nearest stage station (Barney’s Station) is located in the city of Lordsburg, approximately 15 miles to the west. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail as a proposed NHT, at this location.

##### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing

utility corridor can be minimized through the application of best management practices during construction (subroutes 1.1 and 1.2).

## Route Group 1 Summary

Route group 1 would result in low to low-moderate impacts to inventoried resources, values, and settings of the CDNST and Butterfield Trail. The majority of the proposed Project would parallel and be viewed in context with several existing transmission lines and facilities as well as the transportation corridor along NM 113. Overall, based on the results of the impact assessment, subroutes 1.1 and 1.2 would not substantially compromise the CDNST or Butterfield Trail's values, characteristics, and settings.

Table F-2 below provides a summary of the proposed Project's potential intersections with National Trails for all route groups.

**Table F-2.** National Trails System Resource Inventory Data—All Route Groups

Intersection Name	Land Ownership	Proposed Southline Segment or Local Alternative that would Cross Trail	Route Group	Subroute
Butterfield-1	New Mexico State Land Department	P2 (included under Agency Preferred Alternative)	Route group 1	Subroute 1.1
Butterfield-2	New Mexico State Land Department	S8	Route group 1	Subroute 1.2
CDNST-1	New Mexico State Land Department	P4a (included under Agency Preferred Alternative)	Route group 1	Subroute 1.1
CDNST-2	BLM – Las Cruces District	Local Alternative D	Route group 1	Route group 1 Local Alternatives
Butterfield-3	New Mexico State Land Department	P4c	Route group 2	Subroute 2.1
Butterfield-4	BLM – Las Cruces District	Local Alternative LD2	Route group 2	Route group 2 Local Alternatives
Butterfield-5	BLM – Las Cruces District	Local Alternative LD3a (included under Agency Preferred Alternative)	Route group 2	Route group 2 Local Alternatives
Butterfield-6	BLM – Safford Field Office	P5b (included under Agency Preferred Alternative)	Route group 2	Subroute 2.1
Butterfield-7	BLM – Safford Field Office	Local Alternative E	Route group 2	Subroute 2.1
Butterfield-8	Private	LD1	Route group 2	Route group 2 Local Alternatives
Butterfield-9	Private	P7a	Route group 2	Route group 2 Route Variations
Butterfield-10	Private	P7b	Route group 2	Route group 2 Route Variations
Butterfield-11	Private	P7a	Route group 2	Route group 2 Route Variations
Butterfield-12	Private	U1a (included under Agency Preferred Alternative)	Route group 3	Subroute 3.1
Butterfield-13	Arizona State Land Department	Local Alternative H	Route group 3	Route group 3 Local Alternatives
Butterfield-14	Arizona State Land Department	U2 (included under Agency Preferred Alternative)	Route group 3	Subroute 3.1
ANST-1	Arizona State Land Department	U3a (included under Agency Preferred Alternative)	Route group 3	Subroute 3.1

**Table F-2.** National Trails System Resource Inventory Data—All Route Groups (Continued)

<b>Intersection Name</b>	<b>Land Ownership</b>	<b>Proposed Southline Segment or Local Alternative that would Cross Trail</b>	<b>Route Group</b>	<b>Subroute</b>
Butterfield-15	Private	U2 (included under Agency Preferred Alternative)	Route group 3	Subroute 3.1
Butterfield-16	Private	Local Alternative H	Route group 3	Route group 3 Local Alternatives
Anza-1	Private	U3c (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Anza-2	Private	Local Alternative TH3 Option B	Route group 4	Route group 4 Local Alternatives
Anza-3	Private	Local Alternative TH3b	Route group 4	Route group 4 Local Alternatives
Anza-4	Private	Local Alternative TH3b	Route group 4	Route group 4 Local Alternatives
Butterfield-17	Private	Local Alternative TH3b	Route group 4	Route group 4 Local Alternatives
Anza-5	Private	Local Alternative TH3b	Route group 4	Route group 4 Local Alternatives
Anza-6	Private	U3i (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Butterfield-18	Private	U3h (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Butterfield-19	Private	U3i (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Anza-7	Private	U3i (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Anza-8	Arizona State Land Department	U3k (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1
Butterfield-20	Private	U3l (included under Agency Preferred Alternative)	Route group 4	Subroute 4.1

## Route Group 2: Hidalgo Substation to Apache Substation

### *National Historic Trails*

There are no NHTs in the analysis area for route group 2.

### *National Scenic Trails*

#### CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL

#### Route Group 1 Local Alternatives

##### *Scenic and Recreation Resources*

The CDNST would be crossed in by local alternative D (refer to table F-2, CDNST-2) of route group 1 local alternatives. The point of intersection would be approximately 2 miles south of the town of Lordsburg, New Mexico, 0.5 mile south of an existing utility corridor on BLM-land managed by the Las Cruces District (Mimbres RMP).

The analysis area for local alternative D traverses Class B scenery associated with moderate sensitivity. The general form and line of the proposed Project would introduce a new line visually, changing the scale but within foreground views of similar facilities; thereby minimizing the resulting level of contrast to scenic resources that would be traversed. Low impacts to these scenic resources are anticipated because the level of change associated with the proposed Project would be congruent with this landscape and its existing conditions.

Impacts are anticipated to be low and minor to the recreation resources in the analysis area for the proposed Project. Low impacts are anticipated because the proposed Project would be located along previously occupied ROWs within the Lordsburg Valley, and would not conflict with any recreation management prescribed by the Mimbres RMP. There are no trailheads, informational kiosks, or recreational opportunities of national significance along the segment of the CDNST that would be intersected by segment P4a. The Mimbres RMP specifies that “facilities will not be located parallel to the CDNST” (BLM 1993:5-49).

The proposed crossing of the CDNST by alternative D would be a perpendicular crossing and the proposed Project alternative route would not parallel the CDNST for any distance.

### ***Historic and Cultural Resources***

The 2009 Comprehensive Plan does not identify specific historic or cultural resources associated with this segment of the CDNST.

## ***Trails Recommended as Suitable for National Trail Designation***

### **BUTTERFIELD OVERLAND MAIL AND STAGE ROUTE (HISTORIC)**

#### **Subroute 2.1**

#### ***Scenic and Recreation Resources***

Approximately 6 miles east of Lordsburg, segment P4c (refer to table F-2, Butterfield-3) would cross the Butterfield Trail on New Mexico State land, in Class C scenery associated with high to moderate sensitivity while in the same viewshed as an existing 115-kV transmission line and I-10. Segment P5b (refer to table F-2, Butterfield-6) of subroute 2.1 would cross the Butterfield Trail in Class B scenery in the Peloncillo Mountains on BLM land. High sensitivity associated with the Lordsburg landscape to the east would result in low-moderate impacts to these scenic resources within the trail analysis area. Moderate sensitivity is associated with the foothills of the Peloncillo Mountains to the west, and would result in low impacts to these scenic resources for a small portion of the proposed Project within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

#### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor,

since one has not been designated. Subroute 2.1 would have moderate impacts on the characteristics that make the trail worthy of designation as an NHT. Segment P5b (refer to table F-2, Butterfield-6 and figure F-11) would cross the Butterfield Trail adjacent to a Butterfield Trail Related Segment. Likewise, the proposed Project could have moderate impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as on potential NHT properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency's ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The Mimbres RMP specifies that "facilities will not be located within ¼ mile of any stage station on the Butterfield Trail" (BLM 1993:5-47#). The nearest stage station is located at Fort Bowie (Apache Springs Station), approximately 20 miles to the southwest. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

## **Subroute 2.2**

### ***Scenic and Recreation Resources***

Just southwest of the Peloncillo Mountains, approximately 1 miles north of I-10, alternative E (refer to table F-2, Butterfield-7) of subroute 2.2 would cross the Butterfield Trail, in Class C scenery associated with high to moderate sensitivity while in the same viewshed as I-10. The intersection would occur on BLM lands managed by the Safford Field Office. High sensitivity associated with the Peloncillo Mountains landscape to the north would result in low-moderate impacts to these scenic resources within the trail analysis area. Moderate sensitivity is associated with the foothills of the San Simon Valley plains to the west, and would result in low impacts to these scenic resources for a small portion of the proposed Project within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield at this location.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor. Subroute 2.2 would have minor impacts on the characteristics that make the trail worthy of designation as an NHT. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as on potential NHT properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments.

The proposed Project would not limit the agency's ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The Safford RMP does not include resource management prescriptions at this location. The nearest stage station is located at Fort Bowie, approximately 18 miles to the southwest. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

## **Route Group 2 Local Alternatives and Route Variations**

### ***Scenic and Recreation Resources***

Just west of the Lordsburg playa, approximately 15 miles west of Lordsburg, local alternative LD3a (refer to table F-2, Butterfield-5) would cross the Butterfield Trail in Class C scenery associated with high to moderate sensitivity. The viewshed does not include other transmission lines or pipelines. The intersection would occur on New Mexico State lands. High sensitivity is associated with BLM lands and the Peloncillo Mountains landscape to the west of LD3a and would result in low impacts to these scenic resources within the trail analysis area. Moderate sensitivity is associated with the Lordsburg playa to the east of LD3a within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have partially unobstructed views of the proposed Project in the background; however, it would be viewed in context of other existing utility corridors also visible in the background, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location.

Local alternative LD1 (refer to table F-2, Butterfield-8) would intersect the Butterfield Trail on privately owned lands, adjacent to cultivated agricultural fields. Local alternative LD1 would intersect the Butterfield Trail in Class C scenery associated with high to moderate sensitivity while in the same viewshed as I-10. High sensitivity associated with the Peloncillo Mountains landscape to the north would result in low-moderate impacts to these scenic resources within the trail analysis area. Moderate sensitivity is associated with the foothills of the San Simon Valley plains to the west, and would result in low impacts to these scenic resources for a small portion of the proposed Project within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location.

Local alternative LD2 (refer to table F-2, Butterfield-4) would intersect the Butterfield Trail on BLM-managed lands. Local alternative LD2 would cross and roughly parallel the Butterfield Trail, in Class C scenery associated with high to moderate sensitivity. The viewshed does not include other transmission lines or pipelines. Local alternative LD2 would cross between the north and south Lordsburg Playas, somewhat paralleling the Butterfield Trail (see figure F-9). The scale of the proposed facilities would be different, and the proposed Project would introduce new visual features, thereby increasing the level of

contrast and resulting in moderate impacts to scenic resources of the Butterfield Trail at this location. The crossing of the Butterfield Trail by LD2 would be in direct conflict with management prescriptions of the Mimbres RMP, which states ROW “facilities will not be located parallel to the CDNST or Butterfield Trail” (BLM 1993). The Butterfield Trail is located on BLM lands at the Butterfield-4 crossing, and thus this management prescription would apply. Impacts to the Butterfield trail along LD2 would be major and long-term, since the proposed Project would parallel the trail for approximately 3 miles.

Route variation P7a and P7b would intersect the Butterfield Trail (refer to table F-2, Butterfield-9, Butterfield-10 and Butterfield-11) on private lands. Recreation activities in this vicinity are limited since the area is currently comprised of agricultural fields with center-pivot irrigation systems in use.

### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor. Local alternatives LD1, LD2, and LD3a would have minor to moderate impacts on the characteristics that make the trail worthy of designation as an NHT. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as to potential NRHP properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency’s ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The Mimbres RMP specifies that “facilities will not be located within ¼ mile of any stage station on the Butterfield Trail” (BLM 1993:5-47). The nearest stage station is located in Lordsburg (Barney’s Station) approximately 10 miles to the east. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location. There are no known historic, cultural resources, or Trail Related Segments at the intersections of the Butterfield Trail with the route variations.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

## **Route Group 2 Summary**

Route group 2 would result in low impacts to inventoried resources, values, and settings of the CDNST and Butterfield Trail. The majority of the proposed Project would parallel and be viewed in context with several existing transmission lines and facilities as well as the transportation corridor along NM 113. Of route group 2 potential intersections with trails, local alternative LD2 would have the greatest impacts to the Butterfield Trail since it would occur in areas that do not contain existing transmission lines, have been identified as avoidance areas by the Mimbres RMP, and would parallel (as opposed to crossing perpendicularly) the Butterfield Trail for approximately 4 miles.

Overall, based on the results of the impact assessment, route group 2 would not substantially compromise the CDNST’s values, characteristics, and settings. In the area where LD2 would parallel the Butterfield Trail for approximately 4 miles, there would be moderate impacts to the values and settings of the Butterfield Trail.

## **Route Group 3: Apache Substation to Pantano Substation**

### ***National Historic Trails***

There are no NHTs in the analysis area for route group 3.

### ***National Scenic Trails***

#### ***Scenic and Recreation Resources***

Approximately 10 miles southeast of the town of Vail, Arizona, segment U3a (refer to table F-2, ANST-1) would cross the Arizona NST on Arizona State land, in Class B scenery associated with high to moderate sensitivity while in the same viewshed as an existing 115-kV transmission line and I-10. Users of the Arizona NST would have direct foreground views of the proposed Project; however, it would be viewed in context with the existing utility corridor, resulting in low impacts (the alignments for the Southline Project were specifically located so as to be co-located within or along existing rights-of-ways, thereby limiting new impacts to views). Other recreation areas in the analysis area include Cienega Creek Natural Preserve, Bar V Ranch, Empire Ranch, and Davidson Canyon. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Arizona NST at this location.

#### ***Historic and Cultural Resources***

Since there are no known recreation values associated with the Arizona NST at these segments, impacts are not anticipated.

#### ***Biological, Natural, and Other Resources***

Cienega Creek is a perennial water source identified as a Pima County Biological Core area, which would include segment U3a. Although the segment would span this area and not include transmission line towers, minor impacts are anticipated since special-status species are supported by the Biological Core area, as well as the presence of riparian areas.

Other impacts to biological or natural resources associated with the Arizona NST are anticipated to be low for the proposed Project, because there are no identified geological and scientific resources for the trail within the analysis area that would include the intersection with segment U3a. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

### ***Trails Recommended as Suitable for National Trail Designation***

#### **BUTTERFIELD OVERLAND MAIL AND STAGE ROUTE (HISTORIC)**

##### **Subroute 3.1**

#### ***Scenic and Recreation Resources***

Approximately 17 miles southwest of the town of Willcox, Arizona, segment U1a (refer to table F-2, Butterfield-12) would cross the Butterfield Trail on privately owned land, in Class B scenery associated with high to moderate sensitivity while in the same viewshed as an existing 69-kV transmission line and I-10. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct

and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location. Impacts for both areas of the Butterfield Trail analysis area that would intersect with segment U2 (refer to table F-2, Butterfield-14 and Butterfield-15) of subroute 3.1, would be similar except the intersections would occur on Arizona State lands. However, subroute 3.1 would parallel the Butterfield Trail for approximately four miles. There are no management prescriptions in place that would prohibit actions from paralleling the Butterfield Trail since the Butterfield Trail management planning is ongoing, and since these locations are located upon Arizona State and private lands that do not currently include management prescriptions for the Butterfield Trail.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor. Subroute 3.1 would have minor impacts on the characteristics that make the trail worthy of designation as an NHT. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as to potential NHT properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency's ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. None of the intersections of the Butterfield Trail with subroute 3.1 would occur on BLM-managed lands. The nearest stage station is located at Cienega Creek, approximately 20 miles to the west. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

## **Route Group 3 Local Alternatives**

### ***Scenic and Recreation Resources***

Approximately 1 mile north of I-10, alternative H (refer to table F-2, Butterfield-13 and Butterfield-16) would cross the Butterfield Trail in two separate locations, on Arizona State land and on private land, respectively, in Class B scenery associated with high to moderate sensitivity while in the same viewshed as an existing 230-kV transmission line and I-10. Moderate sensitivity is associated with the foothills of the Rincon Mountains to the northwest, and would result in low impacts to these scenic resources for a small portion of the proposed Project within the trail analysis area. Travel route viewers along I-10 where the Butterfield Trail crosses the highway would have direct and unobstructed views of the proposed Project in the foreground/middleground; however, it would be viewed in context with the existing utility corridor, resulting in low-moderate impacts. Although the scale of the proposed facilities would be

different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at this location.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor. Alternative H would have minor impacts on the characteristics that make the trail worthy of designation as an NHT. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as to potential NHT properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency's ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The nearest stage station is located at Fort Bowie, approximately 100 miles to the east. Based on these criteria, the proposed Project would have a low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the trail are anticipated to be low for the proposed Project, because there are no identified biological, geological, and scientific resources for the trail analysis area. Impacts and ground disturbance where the proposed Project would parallel an existing utility corridor can be minimized through the application of best management practices during construction.

## **Route Group 3 Summary**

Route group 3 would result in low impacts to inventoried resources, values, and settings of the Arizona NST and the Butterfield Trail. The majority of the proposed Project would parallel and be viewed in context with several existing transmission lines and facilities as well as the transportation corridor along I-10. Overall, based on the results of the impact assessment, route group 3 would not substantially compromise the Arizona NST or the Butterfield Trail's values, characteristics, and settings.

## **Route Group 4: Pantano Substation to Saguaro Substation**

### ***National Historic Trails***

#### **JUAN BAUTISTA DE ANZA NATIONAL HISTORIC TRAIL**

##### **Subroute 4.1**

##### ***Scenic and Recreation Resources***

Segments U3c (refer to table F-2, Anza-1), U3i (refer to table F-2, Anza-6 and Anza-7), and U3k (refer to table F-2, Anza-8), would cross the Anza NHT in areas that already contain 115-kV transmission lines. Subroute 4.1 would cross the Anza NHT in the Tucson area in four locations (segment U3i would be crossed twice in separate locations), all upon private land, except for segment U3k which would intersect

the Anza NHT on Arizona State land. The scenery has not been classified in these areas, but generally has low sensitivity that is associated with highly urbanized areas. Travel route viewers along I-10 and local Tucson streets where the Anza NHT crosses would have direct and unobstructed views of the proposed Project in the foreground; however, it would be viewed in context with the existing utility corridor and urban areas, resulting in low impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Anza NHT at these locations.

There are no known recreation values associated with the Anza NHT at these segments that would be intersected by the proposed Project; therefore impacts are not anticipated.

### ***Historic and Cultural Resources***

No high-potential sites or segments of the Anza NHT have been identified along subroute 4.1 that would be impacted by the proposed Project intersections of the Anza NHT. The NHT visual analysis for the Anza NHT examined known trail-related cultural resources within 3 miles of the centerlines; no sites were identified in the analysis area.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the Anza NHT are anticipated to be low for subroute 4.1, because there are no identified biological, geological, or scientific resources for the Anza NHT in the analysis area. Further, subroute 4.1 would intersect the Anza NHT in largely urbanized areas of metropolitan Tucson, and no BLM biological or natural land management prescriptions are in place within the analysis area.

## **Route Group 4 Local Alternatives**

### ***Scenic and Recreation Resources***

Local alternatives TH3 Option B (refer to table F-2, Anza-2) and TH3b (refer to table F-2, Anza-3, Anza-4, and Anza-5) would cross the Anza NHT in areas that already contain 115-kV transmission lines (local alternative TH3b would cross the Anza NHT three times in separate locations). Route group 4 Alternatives would cross the Anza NHT in the Tucson area in four locations, all on private land. The scenery has not been classified in these areas, but generally has low sensitivity that is associated with highly urbanized areas. Travel route viewers along I-10 and local Tucson streets where the Anza NHT crosses would have direct and unobstructed views of the proposed Project in the foreground; however, it would be viewed in context with the existing utility corridor and urban areas, resulting in low impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Anza NHT at these locations.

There are no known recreation values associated with the Anza NHT at these segments that would be intersected by the proposed Project; therefore impacts are not anticipated.

### ***Historic and Cultural Resources***

No high-potential sites or segments of the Anza NHT have been identified along the route group 4 local alternatives that would be impacted by the proposed Project intersections of the Anza NHT. The NHT visual analysis for the Anza NHT examined known trail-related cultural resources within 3 miles of the centerlines; no sites were identified in the analysis area.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the Anza NHT are anticipated to be low for the route group 4 local alternatives, because there are no identified biological, geological, or scientific resources for the Anza NHT in the analysis area. Further, the route group 4 local alternatives would intersect the Anza NHT in largely urbanized areas of metropolitan Tucson, and no BLM biological or natural land management prescriptions are in place within the analysis area.

## ***National Scenic Trails***

### **ARIZONA NATIONAL SCENIC TRAIL**

#### **Subroute 4.1**

There are no NSTs in the analysis area for route group 4.

### ***Trails Recommended as Suitable for National Trail Designation***

#### **BUTTERFIELD OVERLAND MAIL AND STAGE ROUTE (HISTORIC)**

#### **Subroute 4.1 and Local Alternatives**

##### ***Scenic and Recreation Resources***

The proposed Project would cross the Butterfield Trail in the Tucson area in four locations, all upon private land. Local alternative TH3b (refer to table F-2, Butterfield-17), and segments U3h (refer to table F-2, Butterfield-18), U3i (refer to table F-2, Butterfield-19), and U3l (refer to table F-2, Butterfield-20) would cross the Butterfield Trail in areas that already contain 115-kV transmission lines. The scenery has not been classified in these areas, but generally has low sensitivity that is associated with highly urbanized areas. Travel route viewers along I-10 and local Tucson streets where the Butterfield Trail crosses would have direct and unobstructed views of the proposed Project in the foreground; however, it would be viewed in context with the existing utility corridor and urban areas, resulting in low impacts. Although the scale of the proposed facilities would be different, the proposed Project would replicate these existing visual features, thereby reducing the level of contrast and resulting in low impacts to scenic resources of the Butterfield Trail at these locations.

Since there are no known recreation values associated with the Butterfield Trail at these segments, impacts are not anticipated.

##### ***Historic and Cultural Resources***

The intersections with the proposed Project at these locations would not affect the ability to manage the trail if designated an NHT, nor would it require relocation of a National Trail Management Corridor since none has been designated. Subroute 4.1 and route group 4 Local Alternatives would have minor impacts on the characteristics that make the trail worthy of designation as an NHT. Likewise, the proposed Project could have minor impacts on potential Federal Protection Components, including high-potential route segments located on public land, as well as to potential NHT properties, including remnants and artifacts from the associated period of use that may be eligible for or listed on the NRHP to qualify as possible high-potential historic sites or high-potential route segments. The proposed Project would not limit the agency's ability to manage the trail for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. The nearest stage station is located at Fort Bowie, approximately 100 miles to the east. Based on these criteria, the proposed Project would have a

low impact on high-sensitivity, historic segments or sites associated with the Butterfield Trail at this location.

### ***Biological, Natural, and Other Resources***

Impacts to biological or natural resources associated with the Anza NHT are anticipated to be low for subroute 4.1 and local alternatives, because there are no identified biological, geological, or scientific resources for the Butterfield Trail in the analysis area. Further, the route group 4 local alternatives would intersect the Butterfield Trail in largely urbanized areas of metropolitan Tucson, and no BLM biological or natural land management prescriptions are in place within the analysis area.

### **Route Group 4 Summary**

Route group 4 would result in low impacts to inventoried resources, values, and settings of the Anza NHT and Butterfield Trail. The majority of the proposed Project would parallel and be viewed in context with several existing transmission lines and facilities as well as the transportation corridor along I-10. Further, there would be no ROW expansion between the Del Bac and Rattlesnake substations. Overall, based on the results of the impact assessment, route group 4 would not substantially compromise the Anza NHT or the Butterfield Trail's values, characteristics, and settings.

## **Agency Preferred Alternative**

Short-term, minor impacts would occur at the intersections of segments P2, P4a, LD3a, P5b, U1a, U2, U3a, U3i, U3h, U3k, and U3l and National Trails or Trails Recommended as Suitable for National Trail Designation during construction, as described above.

### ***National Scenic Trails***

The CDNST would be crossed once by the Agency Preferred Alternative, at segment P4a; impacts would be the same as described under subroute 1.1 above (refer to figures F-6, F-27, and F-48).

The Arizona NST would be crossed once by the Agency Preferred Alternative, at segment U3a; impacts would be the same as described under subroute 3.1 above (refer to figures F-19, F-40, and F-61).

### ***National Historic Trails***

The Anza NHT would be crossed three times by the Agency Preferred Alternative; twice by segment U3i and once by segment U3k; impacts would be the same as described under subroute 4.1 above (refer to figures F-22, F-24, F-43, F-45, F-64, and F-66).

### ***Trails Recommended as Suitable for National Trail Designation***

The Butterfield Trail would be crossed eleven times by the Agency Preferred Alternative. Impacts of the intersection of segment P2 and the Butterfield Trail would be the same as described under subroute 1.1 above (refer to figures F-4, F-24, and F-46). Impacts to the intersection of segment P5b would be the same as described under subroute 2.1 above (refer to figures F-10, F-30, and F-52). Impacts of the intersection of segment LD3a and the Butterfield Trail would be the same as described under route group 2 above (refer to figures F-9, F-29, and F-51 for LD3a and figures F-12, F-13, F-32, F-33, and F-54 intersections, respectively). Impacts of the intersection of segment U1a and the Butterfield Trail would be the same as described under subroute 3.1 above (refer to figures F-15, F-35, and F-56). Segment U2 would cross the Butterfield Trail twice; impacts would be the same as described

under subroute 3.1 above (refer to figures F-16, F-17, F-37, F-38, F-57, and F-59). The Butterfield Trail would be crossed by segments U3h, U3i, and U3l; impacts at these intersections would be the same as described under subroute 4.1 (refer to figures F-22, F-23, F-43, F-44, F-64, and F-65).

## **Cumulative Effects**

In addition to direct and indirect effects, this section addresses the cumulative effects of the proposed Project that would result from the construction and operation of the Project, combined with other reasonably foreseeable future actions. For detailed process and methods for analysis, scoping and Project issues, parameters, identification of past, present, future, and reasonably foreseeable future actions, land uses, and projects, including energy development forecast analysis, see section 4.21 of this EIS.

Cumulative effects to National Scenic and Historic Trails were evaluated in the context of a trail's resources, qualities, values, associated settings, and primary use or uses in a manner similar to the impacts described under "Impact Analysis Results" in this appendix. However, for the cumulative effects assessment and discussion, it is assumed that the resources, qualities, values, and associated settings are similar to portions of the trails that were inventoried and assessed in this appendix. Cumulative effects are interdisciplinary, multijurisdictional, and usually do not conform to political boundaries.

The geographical extent for the National Scenic and Historic Trails cumulative effects analysis for the proposed Project was a 1-mile buffer on each side of the centerline, as well as the entire length of the continuous trail within the Field Offices traversed by the Project. For NHTs, the analysis area was limited to the high-potential route segments, high-potential historic sites, and auto tour routes identified in the areas traversed by the proposed Project, in consideration of other reasonably foreseeable projects along the National Trail. Past, present, and reasonably foreseeable future actions that were considered for this analysis are described in section 4.21 of this EIS. The following is a summary of cumulative effects on National Scenic and Historic Trails for the proposed Project during construction and operation (refer to table F-3 at the end of this section).

## ***Scenic and Recreation Resources***

Cumulative effects to scenic and recreation resources relate to the modification of landscape scenery and the viewsheds associated with public viewing areas. Cumulative effects to scenic resources could result from: 1) the incremental modification of landscape character (i.e., settings) in natural areas, and 2) altering the viewsheds associated with trail-related public viewing locations based on the construction and operation of the proposed Project in context with past, present, and reasonably foreseeable future actions. Cumulative impacts to recreation resources may occur as a result of the construction and operation of the proposed Project, from reasonably foreseeable future projects that could include the development of new and temporary access roads and staging yards, as well as the operation of industrial-scale renewable projects, both wind and solar, as described in the cumulative effects (section 4.21) of this EIS. These cumulative effects to recreation resources, values, and qualities can be both experiential (i.e., primitive nature of trail is altered by the indirect introduction of off-highway vehicle use) and physical (i.e., the actual ROW of a trail [or associated linkages] is modified in a manner that the intended land use is changed). The Hidalgo substation construction activities would have a cumulative effect to the recreation setting of the CDNST during construction activity. The pre-existing Hidalgo substation currently limits the recreation setting to a modified landscape, but future construction of additional transmission ROWs (e.g., SunZia) and substation tie-ins may degrade the recreation setting further with the addition of access roads or transmission line towers and spans. The Hidalgo substation is located upon private land. The CDNST passes by the Hidalgo substation on private lands 0.3 mile south of the substation, in a disturbed setting. BLM lands that include a management corridor for the CDNST are

located approximately 0.7 mile to the east of the substation. Cumulative effects for scenic and recreation resources in context with National Trails would occur over the life of the proposed Project.

## **CUMULATIVE EFFECTS ANALYSIS FOR THE PROPOSED SOUTHLINE PROJECT**

Generally, construction activities associated with the proposed Project would include: upgrading or construction of access roads, clearing and grading activities for the ROW, excavating and installation of foundations, assembling structures with temporary and permanent pad sites, stringing conductors and shield wires, and clean-up and reclamation of affected areas. Some activities associated with construction, such as access roads, pad sites, and staging areas (as identified in the POD) would be temporary. Areas disturbed by temporary construction activities (i.e., access roads, staging areas, temporary pad, or pulling and tensioning sites) would not be required for routine maintenance activities during operation. These temporary areas will be identified in the POD and restored at the end of construction. Project-related access identified for closure near National Trails would be restored at the end of construction. Temporary construction activities would result in cumulative effects that would contribute incrementally from the reasonably foreseeable actions. Operation activities associated with the proposed Project would be ongoing and long-term, and would occur along the ROW for the life of the Project. The proposed transmission line structures, substations, and associated long-term access would be permanent and require routine maintenance, including vegetation maintenance in areas where forests occur. Operation of the reasonably foreseeable actions would permanently alter the scenic resources and change the viewsheds associated with recreation resources for the life of the proposed Project. Although the transmission line would cross the Arizona NST and CDNST on existing utility corridors, the difference in scale of the structures will be noticeable, and the length of time trail users are under transmission lines and exposed to transmission line noise and foreground visual impacts will be longer. Additional reasonably foreseeable future actions may further the degradation of the CDNST trail corridor setting near the Hidalgo substation. Therefore all possible mitigation measures would be implemented to minimize experiential and visual impacts such as using towers that oxidize to a natural patina, and spacing towers for maximum possible distance from trail and/or matching structure spans. Construction of additional roads crossing NSTs and disturbance of the trail tread would be avoided. NSTs are intended to be in non-motorized settings where feasible and mitigation would include measures to prevent motor vehicles of any kind from accessing NSTs during or after construction, and prevent public use of Project created routes within 0.25 mile of NSTs after Project completion.

Reasonably foreseeable actions that would likely have direct cumulative effects to visual resources during construction of the proposed Project include residential development, agricultural development, airport and military infrastructure development, and transportation corridor development. Construction would require grading and/or removal of vegetation, which would introduce landscape contrast into the analysis area. These developments, when added to direct effects of the proposed Project, would incrementally convert the natural landscape into a developed or urban landscape that would adversely affect the scenery over time. Specific projects that would alter landscape scenery for the National Trails include residential development (Vail, Arizona in the Arizona NST vicinity). Other types of reasonably foreseeable actions within the analysis area that are more industrial include mining and mineral development, utility development such as high-voltage transmission lines, power generation stations, and substations. These developments, when added to direct effects of the proposed Project, would incrementally convert natural landscapes into industrial landscapes, which over time would adversely affect scenic resources associated with National Trails in those locations.

In the context of the proposed Project, cumulative effects to scenic resources would occur based on the industrialization of natural-appearing landscapes and the modification of views from sensitive recreation resources. In addition, conservation, protection, and restoration of National Trail resources would be incrementally affected by reasonably foreseeable actions within the analysis area. The primary use or uses

of NSTs could be adversely affected by unauthorized off-highway vehicle use if selective mitigation measures were not successful. The primary use or uses of NHTs along auto tour routes could be adversely affected by reasonably foreseeable actions if the route designation was changed in the Anza NHT CMP. Namely, if auto tour routes were changed in the Anza NHT CMP, some trail segments may become high potential segments, or may no longer be managed as a high potential segment.

Specific projects that would have the greatest effect on scenic resources include the not yet constructed SunZia Southwest Transmission Line Project (CDNST, Arizona NST, Anza NHT, and Butterfield Trail). This Project would potentially be constructed in the some of the same corridors as the proposed Project, and therefore would contribute to the modification of scenic resources associated with the analysis area. Although construction of these projects would not occur at the same time as the proposed Southline Project, the introduction of these reasonably foreseeable actions (linear projects) would increase dominance along the Project analysis area and would affect scenic resources and recreation viewers. If these projects are consolidated, then construction disturbance would be focused within a specific area (e.g., at Butterfield-1 and CDNST-1), rather than multiple projects occurring at intermittent locations. Cumulative effects would be greater where they are not consolidated because more trail-related resources, qualities, values, and associated settings may be affected by these actions (e.g., the Arizona NST would not be crossed by the proposed Project and Sunzia in the same locations). Where these projects may be consolidated, cumulative effects during construction could be further reduced if structure spans were matched (where feasible), potential ROW distance minimized, and restoration of temporary construction areas (i.e., access roads) occurred.

Reasonably foreseeable actions within the proposed Project's analysis area that could contribute to cumulative effects include the Avra Valley Solar Project (Anza NHT, Arizona NST, Butterfield Trail), UA Tech Park Thermal Storage Demonstration Project (Arizona NST, Butterfield Trail), and Fotowatio Solar Project (Anza NHT, Arizona NST, Butterfield Trail). These projects would result in construction modifications that would adversely affect scenic resources associated with the trail, by introducing numerous vertical and geometric structures within a largely flat and horizontal landscape. In addition to effects on scenery, the introduction of the proposed Project in context with these other projects would have a cumulative effect on recreation viewers using the National Trail, including but not limited to the developed recreational trail, local travel routes, and recreation resources associated with the trail. The intensity of cumulative effects would vary based on distance from the trail viewers to the facility, presence of man-made features in the landscape, and proposed Project visibility.

National Trails provide a recreational and visual experience that is continuous across jurisdictions and beyond the boundaries of a given project area. The permanent and irreversible effects of the proposed Project, combined with the effects of other projects occurring throughout the trail corridor could contribute to an overall degradation of the national trail experience. Among other proposed projects that would substantially impact visual quality are the proposed Rosemont Copper Mine Project, 12 miles south of the analysis area, and the proposed Tailings Storage Facility for Ray Mine in the Ripsey Wash area, 70 miles north of the analysis area. Other past, present, and reasonably foreseeable projects such as mines, transportation corridors, fiber-optic lines, rail, and other land-disturbing projects would result in adverse cumulative effects to both scenic and recreation resources. Cumulative effects could possibly be reduced by consolidating, to the extent practicable, like facilities and sharing access whenever possible.

## **CUMULATIVE EFFECTS ANALYSIS, INCLUDING ENERGY DEVELOPMENT SCENARIOS**

Cumulative effects to scenic and recreation resources also considered the potential for renewable energy development in the vicinity of the proposed Project. Although the visual influence of the proposed Project would not necessarily encompass the entirety of the renewable energy development areas (i.e., direct

effects), the typical scale of renewable energy projects requires a large area of effect, as compared to transmission line projects. Therefore, it is reasonable to assess the potential renewable energy development zones in context with the proposed Project from a cumulative effects aspect. Following are cumulative effects for construction and operation based on potential wind and solar energy development.

Potential wind and solar development could occur in both New Mexico and Arizona in the vicinity of the proposed Project. These types of development typically require surface disturbance that result in strong visual contrast. Based on current solar technology, vegetation would be removed within the footprint of potential solar facilities, which adversely effects landscape scenery. Over time, each additional solar facility (and associated transmission line) would incrementally convert the character of affected landscapes from natural to industrial. In addition, cumulative effects to recreation viewers within the vicinity of the solar development areas would occur based on what type of solar technology would be implemented. Photovoltaic technology has a relatively low profile, such that viewer impacts are reduced. Concentrating Solar Trough, or “Power Tower,” technologies have components that are typically high profile and increase potential impacts to viewers. Other anticipated cumulative effects resulting from potential solar facilities, per the *Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* (BLM and Department of Energy [DOE] 2010), include: effects to night skies associated with illumination requirements for maintenance and nighttime operation; effects to sensitive viewsheds, based on the introduction of glint and glare, depending on the type of solar technology developed; and effects to landscape setting, based on the formal geometric shapes associated with industrial-scale facilities. Although the identified reasonably foreseeable actions are unlikely to physically impact the trail (i.e., resulting in the need to relocate the trail due to the Project footprint), experiential impacts to recreation viewers would occur due to large wind farms or solar facilities within proximity of the trail. Similar to reasonably foreseeable actions that are linear (i.e., transmission line, pipeline), the resources, qualities, values, and associated settings would have cumulative effects throughout the analysis area. Where feasible, consolidation of associated transmission lines for these actions would be recommended as a mitigation measure to reduce cumulative effects. Mitigation may also include trail education kiosks or, as identified by the Trail Administrator, off-site mitigation could be specified on a case-by-case basis. Mitigation measures for future actions that may physically impact the trail could include visual buffers along the trail, or locating these actions farther from the trail to physically preserve trail-related resources, although experiential impacts would still occur for recreation viewers.

## ***Historic and Cultural Resources***

Incremental impacts to cultural resources result from past, present, and reasonably foreseeable future projects. Ground disturbance associated with linear facilities, such as transportation corridors (i.e., I-10, NM 9, I-19), Union Pacific Railroad, and Santa Fe Railroad) has had major incremental cumulative effects because many transportation corridors follow older trails or corridors that were used historically. For example, portions of Anza NHT that parallel I-19, and the historical alignment of the Butterfield Trail that parallels a portion of I-10, may have been partially or wholly destroyed because of the development of transportation corridors. The proposed alternative routes would extend across segments of several historical trails of various levels of significance. Although the proposed Project would not physically impact the existing trails, a potential remains for visual impacts. Although the proposed Project would have a small incremental effect on historic trails as a whole, the cumulative effect of linear projects either crossing or paralleling historic trails would result in incremental degradation to the historic feeling and setting of these trails and to opportunities for future generations to experience landscapes as early travelers would have seen them.

## ***Biological, Natural, and Other Resources***

Construction of the proposed Project would have low and minor effects to natural resources, in common with other current and future developments in the region. Cumulative effects to natural resources relates to ground disturbance and the resulting loss of biological, geological, and scientific resources. Similar to historic and cultural cumulative impacts, many biological and natural resource impacts have already occurred along the Anza NHT and Butterfield Trail from past transportation development projects. Cumulative effects for scenic natural resources related to the trail would occur over the life of the proposed Project.

### **CUMULATIVE EFFECTS ANALYSIS FOR THE PROPOSED SOUTHLINE PROJECT**

Ground disturbance and the resulting loss of biological, geological, and scientific resources is an effect common to all new development, and in most cases, results in additive cumulative effects to these resources. Related direct effects restricted to the vicinity of construction in the analysis area include associated noise and disturbance of local wildlife. The proposed Project would contribute to ongoing loss of natural habitat in the cumulative effects analysis area where ground disturbance is required, although this is mitigated where possible by siting the proposed Project near existing areas of disturbance. Any future development may contribute to habitat loss, although most reasonably foreseeable actions within the analysis area are likely to be near previously disturbed areas. In general, most types of development avoid high-sensitivity habitats of high quality. Some indirect effects of construction can result in off-site effects that are greater than the additive effects of habitat loss within a construction area. Initially, invasion of noxious weeds and other non-native plants tends to concentrate around areas of recently disturbed ground, expanding outward into undisturbed habitat under favorable conditions. Each additional ground-disturbing activity provides a new potential foothold for invasive plants, and could allow effects to extend rapidly beyond the initial area of disturbance. Erosion, particularly where construction occurs in steep terrain or near surface water, may result in silt being carried downstream, potentially altering stream substrate and aquatic habitat. Although these effects may occur with current and future development in the cumulative effects analysis area for National Trails, standard and selective mitigation measures for the proposed Project would minimize any contribution to these cumulative effects to the extent feasible.

Effects of operation of the proposed Project include those related to the presence of access roads and associated maintenance activities, and the presence of transmission structures and lines in the environment. In general, locating multiple linear utilities in the same area minimizes cumulative effects on biological resources. Total ground disturbance is reduced because access roads may serve multiple projects, and other effects to biological resources such as maintenance activities, recreational or other use of access roads, and risk of invasive plant spread would affect a smaller portion of the landscape than if utilities were widely separated. However, utility corridors may create edge effects or act as dispersal barriers, and so co-locating utilities is not universally beneficial to all types of biological resources (i.e., vegetation, wildlife, etc.). However, the benefits of reducing total ground disturbance when multiple linear utilities are co-located may outweigh the negative effects of increased local intensity of disturbance in many cases (see section 4.21 for detailed cumulative effects to biological resources).

### **CUMULATIVE EFFECTS ANALYSIS, INCLUDING ENERGY DEVELOPMENT SCENARIOS**

Development and operation of wind energy facilities have several types of impacts in common with construction and operation of the proposed Project. Ground disturbance, maintenance activities, generation-tie transmission lines, the risk of invasive plant colonization, and construction activities are impacts associated with wind energy that are similar to the development of major transmission lines.

Wind turbines and major transmission lines create collision hazards for birds. However, the risk posed by transmission lines is relatively dispersed, except where a line would cross major migration corridors. Siting wind energy facilities away from major migration corridors reduces the collision risk to migratory birds, but may still affect resident birds. Impacts associated with solar development are much more intensive than those associated with wind energy or transmission lines. Solar fields are generally large and contiguous, from tens to hundreds of acres, and often require complete vegetation removal and elimination of all wildlife habitats within the Project footprint (BLM and DOE 2010).

Engineering constraints require placement of solar fields in large, level areas. Although sensitive montane and riparian habitats are not generally impacted by solar development, a number of species associated with level valley bottoms in the Sonoran Desert are threatened by ongoing urban and agricultural development of those areas. Solar energy development, when not located on previously disturbed land, contributes to the decline of these biological resources. The incremental impact of the proposed Project with solar development would result in moderate impacts to habitats.

**Table F-3.** Summary of Direct, Indirect, and Cumulative Effects

	<b>Past Actions</b>	<b>Present Actions</b>	<b>Proposed Project</b>	<b>Future Actions</b>	<b>Cumulative Effect</b>
National Trails and trails under study	Prehistoric and historic migration and exploration. Ranching and mining roads.	Recreation activity anticipated to remain at current seasonal levels; there is a noticeable increase in recreational activities during the summer.	Minor, temporary decrease in trails setting and desired experiences during construction only. During operation and maintenance, trail activity would be anticipated to remain at current levels.	Moderate, long-term decrease in trail settings during construction as well as operation and maintenance.	Minor cumulative effect during construction and operation.

The National Trails Assessment Project-level impact assessment figures are provided below, beginning with figure F-3, Panel Index Map illustrating the intersections for Project-level National Trails System assessment. Map panels for visual and recreation resources are illustrated on figures F-4 through F-24; map panels for cultural, biological, and other natural resources are illustrated on figures F-25 through F-45; and map panels for the composite impact assessment results are illustrated on figures F-46 through F-66.